

The University of Chicago

THE NATURE OF OPIATE ADDICTION

A PART OF A DISSERTATION SUBMITTED TO
THE FACULTY OF THE DIVISION OF THE
SOCIAL SCIENCES IN CANDIDACY FOR
THE DEGREE OF DOCTOR OF PHILOSOPHY

DEPARTMENT OF SOCIOLOGY

1937

By

ALFRED RAY LINDESMITH

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INTRODUCTION

The present study arises out of an interest in drug addiction and the desire to make that behavior intelligible. More specifically it was desired to formulate, if possible, some sort of general statement as to the manner in which addiction becomes established and as to what it consists of essentially. Our problem is most clearly indicated if one raises the question as to why some persons become addicted while others who may try the drug once or twice or oftener do not. As we shall point out later, individuals may receive the drug for periods of months or years and not become addicts while others become addicted after a few weeks. The attempt to account for this variation in reactions to the administration of opiates involves both the consideration of the nature of the habit and the manner in which it is established, as the chapters that follow will show.

The principal source of information, outside of the literature of the subject, was the testimony of addicts interviewed personally by the writer. Approximately fifty addicts were interviewed over varying periods of time--some only once or twice and others repeatedly over a period of several years. Most of these addicts were introduced to the writer by other addicts with whom an acquaintanceship had already been established and who were interested in the study. These introductions were preceded with the assurance that the writer was not a law enforcement agent, and that there was no need to conceal information from him. Inasmuch as the individuals who gave the most assistance in the study were themselves not informers, or "stool pigeons," there were relatively few informers included in the study--only seven or eight as far as is known.

The usual precautions taken by the sociologist who employs what is known as the method of the "participant observer" were taken. Moralization was scrupulously avoided, and every encouragement was given the addict to speak his mind freely. At each interview a small sum of money was ordinarily given to the individual interviewed in order to furnish an incentive for him to spend his time in this way. Interviews were informal and were recorded as

soon after the conversation as possible. All interviews were outside of institutions. No attempt was made to secure life-histories in the usual sense of the term, but rather the relevant aspects of each addict's experience were gone over in the light of the hypothesis which had been formulated. In the intervals between interviews reflection upon the data secured led to the formulation of further problems which were again and again examined in the light of the addict's testimony. Care was taken not to tell the addict of the hypothesis of the study so as to avoid prejudicing his replies and his information. He was simply told that the writer wanted to get an understanding of the habit, to study the "psychology of the habit." This explanation was ordinarily entirely sufficient for these addicts, who very often regarded an objective study of opiate addiction as highly desirable and likely to be beneficial in making the public appreciate their plight more adequately than they do at present.

Before the writer began the present study he knew very little about addiction. He had read no serious discussion of the matter from an objective scientific viewpoint, nor had he talked with drug addicts about their habits. At the outset, the effort was therefore made to avoid the possible biases that might have been introduced by familiarity with prevailing conceptions, by refraining from reading the literature until some sort of preliminary notion of the matter had been formed from direct conversation with addicts. The initial hypothesis of the study was formulated before the literature was consulted. Only after the investigation had taken a definite turn and had begun to organize itself around a few central conceptions was the literature consulted.

A preliminary idea which we applied to the problem was that an addict becomes addicted whenever he knows what drug he is getting and has been getting it long enough to cause withdrawal distress upon removal. This hypothesis had to be abandoned almost at once because one of the very first cases was that of a man who had escaped addiction on one occasion when the drug had been administered for a period of several weeks with his knowledge. For some time we were unable to resolve this difficulty. Then, a statement by Dr. Erlenmeyer to the effect that the habit depended upon the withdrawal distress¹ led us to the next formulation of

¹Quoted by C.E. Terry, and M. Pellens, The Opium Problem (New York:Com. on Drug Addiction, 1928), p. 602, speaking of the withdrawal

the hypothesis in the following form: a man becomes a drug addict when he perceives and recognizes the withdrawal distress. This hypothesis seemed to offer considerable possibilities but it also had to be revised when cases were found in which individuals had experiences and recognized the withdrawal distress but had not continued the use of the drug thereafter. The final revision of the hypothesis involved the shift from the perception and recognition of withdrawal distress as the essential factor to the process of using the drug for the consciously understood purpose of alleviating the withdrawal symptoms. This statement of the hypothesis was found to be superior to the others in a number of important respects. In the first place no cases were found to which it was not applicable, and in the second place it offered a more ready means of showing how addiction might be caused or generated in this process. This final formulation also resisted further attempts at revision or correction.

The fact that the hypothesis as elaborated in this study was several times revised in the course of the study suggests that further evidence might necessitate further revision. The possibility of this cannot be denied; this seems to us to be one of the principal advantages of our approach, that the hypothesis in its various stages has always been sufficiently exact so that it had to be revised in the light of negative evidence. It will be noted, however, that each succeeding tentative hypothesis used in the study was not constructed de novo but was built upon the one which had preceded it and which had to be discarded. The new hypothesis consisted of an alteration of the old one so as to include the cases which appeared as exceptions to the discarded theory.

The question may always be asked whether the search for negative cases was properly conducted, and whether the observer has not neglected evidence of a contradictory character. There is of course no final answer to such an objection. It is probable that somewhere in the course of any study such unconscious dis-

experience, Erlenmeyer stated: "In such moments the craving for morphine is born and rapidly becomes insatiable, because the patient has learned during the period of habituation, when abstinence symptoms always set in after the effect of the last morphine dose had passed off, that those terrible symptoms are banished as if by magic by a sufficiently large dose of morphine." Erlenmeyer was principally interested in the physiological aspects of the matter and made no attempt to elaborate the statement quoted above.

tortion takes place. Concerning the central hypothesis and the direct lines of evidence, however, certain procedures were followed which definitely excluded the possibility of the operation of bias. For example, when we had stated our theory in approximately its final form it occurred to us that it could be tested in cases in which an individual had had two separate experiences with morphine or opiates, each of which was sufficiently prolonged to produce withdrawal distress, but the first not resulting in addiction. Case number three in chapter four is such a case. We concluded that if the theory were true these persons would report that they failed to realize the nature of the withdrawal experience in that experience from which they escaped without becoming addicted. We then searched, by all the means at our disposal, for cases in which an addict had had such an experience with the drug prior to becoming an addict. We took account of all cases of this kind which we were able to find or of which we could find any record. Any one of them might have been a negative case, but as it happened none of them were. The inference or prediction which had been drawn on the basis of the theory was fully borne out. We attempted to follow this procedure throughout our study wherever it was possible, and, as it will be seen, this procedure is itself implied in the form in which our theory is stated.

We scrupulously refrained from informing the addict of the theories which we held or the reasons for the inquiries we made. Thus when we asked many of our addicts about their experiences in gradual withdrawal cures they were not made aware of the fact that the attempt was being made to test the addict's statement that he feels normal on the drug. It was inferred in advance, that if the addict is in fact normal it should be possible to deceive him about whether he was actually getting the drug or not. By inquiring about these gradual withdrawal cures the information was very often volunteered by the addict that he himself had been deceived at one time or another into believing that he was getting the drug when he actually was not, or vice versa. This information was given to us by a great many addicts in precisely this situation. It was usually introduced with a remark something like this: "You may not believe this and think it's funny, but it's true, etc."--and then they gave the information which corroborated the theory and which was expected in advance on the basis of the theory. In none of these cases did the addict know when he gave out the information

that it had any particular significance for a theory of addiction. He merely regarded it as a curious, or interesting, isolated bit of information.

In such chapters as the first, in which an attempt is made to present a general picture of the addict's life and of addict culture in this country, such checks on the operation of bias as those described above were not available. Undoubtedly there has been, especially at such points, some distortion by reason of various biases of which the writer may have been unaware. General descriptive matter of this type, however, is not at all central or essential in the development of the hypothesis, and one may say that the occurrence of errors there is not vital.

It has often been said that the testimony of addicts is almost valueless because of the extreme secrecy surrounding the habit and because of the addict's tendency to distort and to falsify. We have found this conception to be entirely unjustified as a general and unqualified description. The addict lies and distorts because he feels that he must or that he is deriving some sort of advantage from it. If he is put in a situation in which it is perfectly clear that falsification can not possibly yield any returns of a positive character he will tell the truth like anyone else. Naturally he puts the best interpretation upon his own conduct, but if he finds that the interviewer is not interested in his tentative self-justifications he will often drop his pretence with relief and reveal much information which might otherwise be considered as damning. Evidence as to the degree of rapport established will be found throughout the chapters that follow.

While it is true that addicts do have very strong inhibitions concerning the giving of certain types of information, it was found that this information was largely irrelevant to the hypothesis of the study. The points at which the addict is particularly reticent are those points at which he is particularly in danger of making himself vulnerable to arrest. He hesitates to tell anyone where and from whom he is buying his drug and how he is making his money to buy the drug if he is engaged in illegitimate activities. The information in which we were interested was, however, determined by theoretical interests and not by any desire to obtain information which would be useful to narcotic agents. The addicts soon realized this and saw that there was no possible advantage to be derived from falsification concerning

such things, for example, as how they became addicted ten or twenty years ago and how and why they relapsed the first time. These points are often of almost completely neutral significance to the addict even though they may be of the highest theoretical significance. The same may be said of the effects of the drug. In general we found no particular tendency toward falsification in regard to most of the essential material bearing upon the hypothesis it was desired to investigate.

As a further precaution against prevarication and concealment we made it a point to maintain contact with the addict over as long a time as feasible so that he would have to remember any any earlier untruths and continue to lie consistently if he were lying. As a matter of fact, we found that our precautions in this matter were largely unnecessary, and that, lacking motives for falsification from the very beginning, most of the addicts spoke relatively freely and, after comparatively few interviews, even gave out information concerning such points, for example, as where they obtained their supplies, and how they managed the drug-peddling business by means of which they were supporting themselves. We assume that if a man admits that he is using the drug and also peddling it, he will not feel any particular impulse to tell an elaborate untruth about the relatively innocent matter of how he began the habit many years before. It is our impression that the conception of the addict as a liar is derived from contacts such as those between narcotic agents and addicts or between doctors and addicts. In such cases the addict has real motives for deception--he must prevent the narcotic agent from arresting him or the man from whom he buys his supplies, and when he associates with a doctor he generally has a plan in mind whereby he may manouever himself into getting a "shot."

To further eliminate the possibility of the operation of obvious biases we made it a point to corroborate crucial types of cases with similar cases obtained from the literature or from cases collected and recorded by persons who did not share the writer's conception of the subject or know of the hypothesis advanced here. Every line of evidence presented in corroboration of the theory is based upon cases personally interviewed and others not personally interviewed. No essential part of the viewpoint presented rests solely upon evidence limited to the testimony of the addicts interviewed by the writer. Some of our most telling

evidence was taken from writers whose views of the subject were directly opposed to our own. Many of the corroborative cases, it will be noted, were those of addicts in widely removed portions of the globe in cultures different from our own, and also of addicts in our own culture at a time far removed from the present.

The investigation of any particular subject necessarily proceeds upon the basis of certain assumptions which cannot themselves be established as true in the research in question. As indicated in the above paragraph, an assumption which underlies the present study is that any explanation of drug addiction in a scientific sense must be applicable to drug addiction wherever and whenever it occurs, regardless of the culture in which it occurs or of the time at which it occurs. This assumption runs contrary to a viewpoint which is often expressed in the social sciences, that any generalization that is made must of necessity be relative to a particular culture and a particular time.

A further assumption is, that the progress of science depends upon the establishment of universal laws, or generalizations, which are significant and which apply to all of the instances of the problem rather than to only a given percentage of them. This does not imply any belief in absolute truth, but only a belief in the possibility of stating theories in such a form so that crucial instances testing the theory are suggested and so that negative cases may be sought. It is assumed, in other words, that the exceptional instance is the growing point of science, and that the possibility of cumulative growth in social science can only be obtained by means of universal formulations which provide the possibility of their own reconstruction in terms of negative evidence.¹ The statistical approach to the present problem was not adopted, among other reasons, because it did not appear that it could be adapted to this assumption with regard to this problem. Thus, the theory advanced is, in form, applicable to every case of drug addiction. The demonstration of its inapplicability to a single case would necessitate its revision or rejection. It is not clear to the writer that the statistical method in sociology is adaptable to this requirement of scientific methodology centering around

¹ Cf., e.g., G. H. Mead, "Scientific Method and Individual Thinker," in John Dewey, et al., *Creative Intelligence* (New York: H. Holt and Co., 1917), pp. 176-227; A. D. Ritchie, "Natural Laws," *Scientific Method. An Inquiry into the Character and Validity of Natural Laws* (New York: Harcourt Brace, 1923), chap. III, pp. 53-83.

the universal proposition and the exceptional or crucial case.

The present study was not made statistical, in the sense of trying to determine the percentage of addicts possessing certain traits, etc., for a number of other reasons. In the first place, a great many studies of this kind have already been made by persons in a more advantageous position to obtain large and representative samples. Our own cases were not only few in number but they could scarcely be taken as representative in a statistical sense because of the fact that we were introduced to addicts who were believed to be sufficiently articulate and intelligent to make conversation with them worth while. Obviously, an illiterate addict, or an unintelligent one who is not curious or analytical concerning his own behavior could not have been very useful in a study such as ours. One can only guess as to what statistical biases this selective factor might have introduced. It may furthermore be pointed out that the numerous statistical studies that have been made have lead to no significant theoretical results. They have only succeeded in describing some of the addicts' traits, and in specifying, for example, that such and such a percentage of a particular group of addicts use heroin, or morphine, or opium, and that a given percentage give "bad associates" as a cause of addiction while the rest give other reasons, and so on. Likewise, when addicts are compared statistically with non-addicted control groups no theoretical conclusions have emerged. Even supposing that certain differences were to be established between addicts and non-addicts, the further problem of distinguishing cause from effect and of determining the nature of the relationship would still remain.

We may anticipate an objection to the present study on the basis of the number of cases involved. It may be argued that with a sample of fifty cases out of a total universe of perhaps millions, the range of chance variation would be much too large to permit any reliable generalizations to be made. Our answer to this objection is that the validity of a non-statistical theory does not depend directly or necessarily upon the number of cases.¹ The experimental method involves the assumption, for example, that under certain conditions a single case may be sufficient to warrant a positive conclusion. And while our hypothesis was not established

¹Cf., e.g., A. D. Ritchie, op. cit., pp. 57 f.

experimentally, it is experimental in form. Its verification does not involve the multiplication of instances but the search for and examination of crucial cases. The mere addition of a thousand cases would not make our hypothesis any more probable, except insofar as these thousand cases might include special types of cases specified later in the study. We may also point out that the fifty cases included in the study contributed very unequally to the formulation and testing of the hypothesis. Only a relatively small number played any important part; in fact, the theory might have been formulated on the basis of a single case (case no. 3, in chap. iv).

The testing of a theory must of course remain incomplete in a single study. The final test is derived from the collective results of research that follow. The possibility of this sort of collective verification is provided by the form in which the theory is originally stated and by the fact that others by using the same methods are enabled to test the conclusions or to find the negative case that calls for refinement or rejection of the theory in favor of a more adequate formulation. In those respects, in which the cases studied may be assumed to be representative of the aspects of addiction it was desired to investigate, they may be said to implicate all cases of addiction, and therefore to provide the basis for valid generalization.

Finally we assume that the only final test of methodological principles is in the results obtained from their use in research upon specific problems. We do not have the competence to demonstrate the a priori reasonableness of our assumptions or of our procedure. We are content to let them be tested in the results that follow from their use.

At the beginning of the study the writer had no intention of applying any specific theoretical framework to the problem. The only wish was to handle it in a scientific manner. The fact that certain general theories seemed particularly adaptable to our purposes and presuppositions was something which seemed to be forced upon us by the nature of our data and by our assumptions concerning the nature of scientific method. The specific theory of the opiate habit which we have presented is in no sense dependent upon the general theories to which we have related it nor is it simply an "application" of them. It must stand or fall solely on its own merits and on the basis of its applicability and

usefulness in dealing with the limited range of concrete phenomena with which it is specifically concerned.

We have frequently spoken of "cause" and "effect" in the course of this study. We are aware that it is sometimes asserted that the concept of cause is obsolete in science. It seemed difficult however to get along without it or some sort of substitute for it. The exclusion of the concept of cause from social science seems to us to be a somewhat over-hasty and uncritical importation of a notion from another field. We have used the word "cause" in the sense in which F. Simiand has defined it--as that condition of an event which best meets the following three conditions: (1) that of non-substitutability, (2) of reversability, and (3) of closeness and similarity to the effect.¹ The cause of an occurrence is, therefore, that condition which is most indispensable, which cannot be substituted for by any other condition; which is reversible in that when it is present the effect is always present and when the effect is present the condition in question also must be present; and finally, a cause is that condition of an event which is closest to it in time and which most closely resembles it and is, so to speak, on the same level as the effect.

Drug addiction has been an object of interest for more than a century in the countries of the western hemisphere. Most of the studies that have been made of it have naturally been made by medical men because of the fact that it is the medical profession that has, as a rule, come into most frequent contact with addicts. In the United States in recent years, however, the whole problem has assumed a broader aspect by reason of the fact that addiction became an affair of the underworld and because the medical profession has more or less washed its hands of it. The medical profession still contributes a certain proportion of new addicts and is still pestered by the addict seeking his supply. On the whole, however, the smuggling trade supplies the needs of addicts and the connection of the medical profession with the addict has become relatively casual and incidental. The most important contacts between addicts and those who might conceivably study them are maintained in the prisons of the country and in other establishments where addicts are given what is known as "cures." The present study differs from most earlier studies in that it is

¹F. Simiand, *Le salaire. L'évolution sociale et la Monnaie* (Paris: F. Alcan, 1932), I, 13-25.

a study of the addict "in the open," outside of any institution, and also that it is undertaken from a viewpoint other than the psychiatric, the medical, the physiological, the therapeutic or the preventive viewpoints. Its purpose is to analyze the peculiar social behavior of drug addicts and to isolate the processes which underlie this behavior and cause it to be what it is.

CHAPTER III

HABITUATION AND ADDICTION

It has often been noted in the study of drug addiction that not all of the persons who receive opiates regularly for long periods of time become addicts. Levinstein, a prominent nineteenth century German authority, used the term Morphinist to designate persons who were not addicted but were receiving the drug, and applied the term Morphiumsüchtiger (morphine addict) to those who were addicted. French students also noted this distinction. Attempts were made to introduce separate terms for these two conditions in this country also.¹ Individuals who have been given opiates in therapeutic practice for a period of time without their becoming addicts do not constitute any sort of integrated group or homogeneous entity which calls for separate conceptual treatment except to distinguish them from addicts. It is probably for this reason that no generally accepted usage has grown up to differentiate the two conditions and it is awkward to try to refer to them and to hold them separate. One condition involves pharmacological tolerance and withdrawal distress upon removal of the drug without the usual manifestations of intense desire for the drug which occur in addiction; the other involves, in addition to the pharmacological tolerance and withdrawal distress, the manifestation of intense and persistent desire for the drug as shown by the typical addict as he is known in our society.

That there are such cases in which morphine or some other opiate is given to a patient for a long period of time without resulting in the creation of an independent desire for the drug, such as that which characterizes the addict, is beyond question and is undisputed in the literature. Dansauer and Rieth, in a study of the use of morphine among ex-soldiers, found that many

¹See A. Erlenmeyer, Die Morphiumsucht (3d ed.; Berlin, 1887); Levinstein, Die Morphiumsucht (Berlin, 1880); F. McKelvey Bell, "Morphinism and Morphinomania," New York Medical Journal, XCIII (1911), 680-82; and Daniel Jouet, Etude sur le Morphinisme Chronique, Thèse de Paris, 1883.

of them who had been using the drug regularly for periods of years--sometimes more than five--were nevertheless not addicted. They designate this type of user as a "symptomatic" type and as not belonging to the class of true addicts, whom they speak of as the "ideopathic" type. They classify 240 of their cases in the former category and give representative summaries of about twenty of them. They describe the type as follows:

In der erste Gruppe waren dann solche Fälle aufzunehmen, in denen aus Anlass eines chronischen schmerzhaften oder sonst quälenden Leidens oder wegen chronischen Siechtums eine über längere Zeit fortgesetzte therapeutische Morphingewährung stattgefunden und unter mehr oder minder ausgesprochener Toleranzsteigerung zwar zur pharmakologischen Morphingewöhnung oder chronischen Morphinvergiftung, aber nicht zur Entstehung einer echten Sucht geführt hatte. In diesen Fällen trat zwar auch durch die Gewöhnung an die Wirkung ein Verlangen nach dem Alkaloid ein, ohne dass man jedoch von einem selbständigen sucht-complex sprechen konnte.¹

We propose to distinguish these two kinds of users of opiates by applying the term "habituation" to those cases in which the physiological conditions occur in isolation--that is, in which they do not arouse in the person the self-conscious desire for the drug which characterizes the addict and around which he virtually organizes his life. The term "addiction" will be used to apply to those persons in whom the occurrence of the physiological conditions has been followed by the development of a "craving" or desire which is independent of the physiological conditions of its origin, in that it continues when the conditions of tolerance and withdrawal distress are no longer present. "Habituation," therefore, refers primarily to the non-psychological aspects of addiction,² to the mere fact of organic adaptation. A person may become

¹Dansauer and Rieth, "Ueber Morphinismus bei Kriegsbeschädigten," Arbeit und Gesundheit-Schriftenreihe zur Reichsarbeitsblatt, XVIII (Berlin: Martineck, 1931), 23. For a discussion of this distinction in the German literature of drug addiction see Kurt Pohlisch, "Die Verbreitung des Chronischen Opiatmissbrauchs in Deutschland," Monatschrift für Psychiatrie und Neurologie, LXXIX (1931), Pt. I, 1-32. C. E. Terry, in his Report on the Legal Use of Narcotics in Detroit, Michigan, and Environs for the period, July 1, 1925 to June 30, 1926, p. 18, notes that "patients suffering from chronic painful maladies and taking large doses of morphine or other opium equivalents were said by their physicians not to be addicted. . . ."

²Not entirely, however, for even though a person receives the drug in ignorance, there are psychological effects present, no doubt, even though they may be unrecognized by the patient. Unrecognized psychological effects of this type are obviously of

habituated to the drug while he is unconscious, but he obviously cannot become addicted while he is unconscious. The distinction between the two concepts may perhaps be indicated most exactly by considering the difference between the effects of the opiate upon a person who takes it in a hospital without knowing what he is getting and upon the typical street addict. Further justification for the distinction being made here and a more exact delimitation of the two concepts will be found in the ensuing chapters.

* * * *

In summary, then, we may define the object of our study as consisting of that behavior in regard to opiate drugs which is distinguished primarily by an intense self-conscious desire for the drug and by a tendency to relapse, evidently caused by the persistence, in some form, of this desire after the drug is removed. Other or correlated aspects of this behavior are the sense of dependence upon the drug as a twenty-four-hour a day necessity, the impulse to increase the dosage far beyond the point of bodily necessity, and the definition of self as an addict. We intend to refer to this complex of behavior as "addiction" whenever it occurs, and to the organism which exhibits it as an "addict."¹ In contrast to this complex of behavior we have indicated that we would use the word "habituation" to refer to the prolonged use of opiate drug which is not followed by this form of behavior.

We presume that it will be evident from the above definition that an animal could not be called an "addict" in the sense of the word as it has been defined, regardless of how much of an opiate drug it were to be given. It seems to us that Johannes Biberfeld has correctly expressed the relationship and bearing of animal experimentation to the problem of drug addiction when he asserted that addiction involved two types of phenomena--tolerance for morphine, and craving for morphine--and that it was only the former which had any connection whatever with animal experimentation. The craving, he felt was a phenomenon of an entirely different character and, so to speak, on a different level, so that

a different type from those which occur in the addict; and when reference is made to the "psychological" aspects of addiction, the former will be excluded. The effects of the drug upon a person who does not know that he is receiving it may be regarded as the psychological effects of the opiate before they have been influenced by social factors and before they have had any social effects.

¹Cf. E. W. Adams, "What is Addiction," British Journal of Inebriety, XXXIII (1933), 1-11.

animal phenomena could not shed any illumination upon it.¹ Certainly from the point of view of social science it would be ridiculous to include animals and humans together in the concept of addiction. For precisely the same reasons it seems evident that infants cannot be included in the concept of addiction, regardless of how long they may be given opiates. In later chapters we shall attempt to suggest specific reasons for this inability of the animal or the infant to exhibit addiction behavior.

Now it is evident that the physiological conditions produced by the drug when habitually incorporated into a system are essential to addiction. It is equally clear that other factors must be involved to explain the fact that these physiological conditions are not always followed by addiction even in human beings. The narrower problem of this study is then to consider this matter of isolating the factor which accounts for the transition of a mere physiological condition of the body, produced by the regular administration of a drug for a period of time, into a state of psychological addiction, or craving, as we have described it. It is certain that these physiological conditions must play some role in addiction, for certainly no one ever became an addict without first experiencing them. Any account of addiction must therefore give some place to the physiological aspects at the same time that it takes into account the psychological aspects of the habit, and attempts to account for the fact that some persons escape addiction while others under what are essentially the same physiological conditions, become incurable addicts. This problem of explaining why habituation in certain cases does not lead into addiction and why in certain other cases it does, appears to involve the problem of dealing with two sets of phenomena running parallel to each other but apparently not related to each other in a direct causal tie-up.² In the chapters that follow we shall propose a scheme for handling this situation and shall attempt to isolate and describe the factor or process that accounts for the beginning and nature of addiction as it emerges from habituation and to show how the alleged effects are brought about.

¹"Über die Spezifität der Morphingewöhnung," Biochemische Zeitschrift, LXXVII (1916), 283.

²Dr. John Killian asserts, "That there are psychologic forces contributing to the inception and the maintenance of the narcotic habit cannot be doubted. But the independence of these psychologic forces from physical or physiologic forces may be questioned. The establishment of a relationship of cause and effect between psychic phenomena and physical phenomena is, in my opinion, hopeless." Documentation of Fifth Annual Conference of Committee of the World Narcotic Education Association, Appendix No. 8, "The Part of Science in the Narcotic Drug War."

CHAPTER IV

THE NATURE OF THE OPIATE HABIT

The theory of the nature and origin of the opiate habit to be presented here may be most clearly presented by considering a number of cases which illustrate the manner in which habituation changes into addiction. The assumption is made that the problems of the origin and of the nature of the habit are so closely interwoven as really to constitute a single problem, and that they must therefore be taken up together. The justification for this assumption will become obvious in what follows, especially in a consideration of the genetic relationships that obtain between the essential distinguishing psychological characteristics of addiction and the original process wherein addiction becomes fixed in the first instance.

Case No. 1. One of Stanley's cases, Mr. B., wrote as follows, "In 1899 I went to the Philippine Islands with the third Infantry, landing in Manila in March. Along about the end of my service I developed dysentery and as a result became so weak that from 140 lbs. I went down to 100 lbs. I would report at sickline and the doctors would give me C and O pills which were camphor and opium. These pills I took for four months until the time of my discharge, in 1900. Returning from Manila on the "Sherman," I was so weak that I had to go to sick bay, and did not know what made me so restless and nervous. After my discharge I could not sleep. I met an ex-soldier who said, 'I know what's the matter with you. You've been up against the pipe. You'd better start to shoot it.' Before this, though, he had given me laudanum and yenshee, which relieved my habit. I bought a gun and began to use two one-fourth grain tablets three times a day. I used more and more until I was using thirty grains a day."¹

Case No. 2. Mr. R. The writer was introduced to this man by an addict who gave Mr. R. a dollar on the condition that he would permit the writer to watch him make the injection and also tell him about the habit. After he had taken his injection he was asked how he got started on drugs and he told, with scarcely a pause, the following story which we give here in a condensed form.

Mr. R. became acquainted with a number of persons who were using heroin nasally before 1910, when it was cheap and

¹S. S. Stanley, "Drug Addictions," Journal of the American Institute of Criminal Law and Criminology, X (1919-20), 62-70.

usually not regarded as habit-forming. He had once tried cocaine and found it unpleasant, but he observed that heroin seemed to have different effects, transforming a weak and miserable man into a normal alert one. He tried it once and liked it, and inasmuch as it was cheap he bought a dime's worth and kept it in his room. Everynow and then, whenever it occurred to him and when he was feeling particularly downcast, he used a little of it to make him feel better. At first he used it only once every few weeks or so, but gradually he began to take it more and more frequently until after five years of casual intermittent use he had gradually gone from once a month to once a week, to once a day, and finally to a couple times a day. He did not realize that he was in any danger of acquiring a habit even when he used it every day, for in the morning he took a sniff before he went to work to wake himself up. Then toward the latter part of the afternoon, he noticed a let-down and a feeling of fatigue which he attributed to the effects of a blazing sun upon him as he worked. He found that a sniff of his heroin, which he now carried about with him, relieved this feeling of fatigue and enabled him to finish out his day's work in a satisfactory frame of mind and state of body. He had no idea he was "hooked."

About this time he was on his way to Chicago and was to be picked up by a friend in Joliet. He had only a little money, not enough to buy his fare to Chicago, so that when his friend for one reason or another failed to appear according to plan, Mr. R. was worried about how he would get in to Chicago. He exhausted his heroin supply, threw away the empty box and did not think of buying another in his concern over his being stranded. Gradually he noticed that he did not feel well, that his eyes and nose were running, and that he yawned incessantly. He began to wonder if he was getting the flu. He went into a restaurant thinking of buying some food for he realized that he had not eaten for a long time. The sight of food merely repelled him, and he went out again without eating. He could have purchased all the heroin he wanted for a dime in the nearest drug store, but it did not occur to him to do so. Instead he attempted to obtain money from a stranger whom he accosted and explained his fate to. He was turned down, and in his already depressed state this so affected him that he could not work his courage up to try it again.

He finally got into Chicago that night by catching a ride on a train, and early the next morning, feeling more miserable than ever, he went to visit a friend who was still in bed. As he sat talking to his friend he noticed a box of heroin tablets on the dresser. Without altering the tone of his voice or interrupting the conversation, he reached for the familiar box and mechanically broke up a tablet of heroin and sniffed it. In a few moments the entire aspect of the world changed for him as he sat there, and in a flash he realized that this was what "dope fiends" experienced -- that he was addicted. All his distress and misery vanished in a few minutes and then, feeling hungry, he went out and ate heartily. Mr. R. attributed great importance to this critical experience, saying that if someone had taken him to a farm, for example, instead of his coming to Chicago to meet a heroin user, he might have suffered a few days and then recovered rapidly and never been the worse for it. He would never have become a "dope fiend" then, he believes.

Case No. 3. Dr. H. Mr. H., a physician, was given morphin liberally and regularly during a period of months when he was under-going an appendectomy and two other operations for complications. He was not expected to live. As he recovered, the dosage of morphin was gradually reduced and finally withdrawn. Mr. H. knew that he had received morphin, but during the gradual withdrawal he attributed those symptoms of distress that he noticed to the after-effects of the operations and to the processes of convalescence. During the next five years he went on with his practice as before. He felt no craving for a drug and noticed nothing whatever amiss with his mental life. He had seen drug addicts in the course of his medical practice and felt a horror of them, telling himself that he would certainly shoot himself in preference to being one. This attitude of horror remained absolutely unaltered and unaffected by the hospital experience just described. Several years later Mr. H. contracted gall stone trouble and was advised that an operation would probably be necessary. Mr. H., with his previous operations still fresh in his mind, wished to avoid an operation if at all possible, and was told that it might conceivably not be necessary, though it would be necessary for him to take opiates for his attacks. He did not like this idea but he liked the idea of an operation still less, so he began to use opiates for his pains. He used them more and more frequently, both because the attacks came oftener and because he gradually used the drug for smaller and smaller pains. He was permitted to administer the opiates himself because he was a physician and the pains came so suddenly. Finally he "caught himself" giving himself injections when he had no pain at all, and using the drug every day. During this process his horror of drug addiction disappeared. He began to read all the books he could find on the subject and though he realized that he was addicted, he entertained the belief that he would be an exception and quit easily. From his experience with withdrawal symptoms he realized in retrospect that he had experienced these same symptoms several years before without recognizing them. All the efforts that he made along this line by himself ended very shortly and it was not until more than a year later that he was more or less forced to take a sanitarium cure by his wife who had discovered that he was addicted. He found that even though he was off the drug for three years, he did not feel right without it. He is still an addict. He has lost his practice, his money, and his family and uses the drug whenever he is out of jail.

An examination and comparison of these three cases seems to indicate that the one common factor which is invariably associated with the beginning of addiction and without which it does not take place is the perception of the true significance of the withdrawal symptoms when they occur and the use of the drug thereafter, for the conscious purpose of keeping these symptoms from appearing. It is not the knowledge or ignorance of the fact that opiates were given, but the knowledge or ignorance of the meaning of the withdrawal distress that determines whether the individual will become addicted or not as a consequence of habituation. It is this theory

which is the central proposition of the study. According to this theory, the process of becoming an addict begins when an individual suffering from abstinence realizes that all his discomfort and misery is due to the absence of opiates and then proves it to himself by trying the opiate. After this has taken place he uses the drug again and again for the same reason, and it is in this conscious use of the drug to alleviate the distress which it has itself caused, that the characteristic aspects of addiction are created and grow. As case No. 3 implies, when withdrawal symptoms are not understood by the person experiencing them, they do not lead to addiction.

At first glance it may seem odd that a man who deliberately experiments with drugs and who knows and associates with addicts should fail to realize the cause of the distress that accompanies the attempt to stop using the opiate. In this connection, it should be noted that the withdrawal symptoms are very poorly understood by the layman and are often regarded as "imaginary" or purely psychological in character rather than organic and physiological as well. In view of this wide-spread belief, which is sometimes found even among scholars who study this subject and among medical men, it is not surprising that a person who begins to experiment with the drug should believe the same. There is, moreover, absolutely nothing about the initial use or irregular use of the drug for very short periods of time, to give any hint of what is to follow. The drug user does not ordinarily find that his efforts to explain what he means by "yen" (which signifies both withdrawal symptoms and desire for opiates) are very successful. The ordinary non-addict finds it difficult to imagine himself addicted, and being inclined to look down upon the user, he discounts his tales of suffering and either regards the abstinence symptoms as "imaginary" or as of much less importance than the addict does. A trial or two may further convince him that his opinion is correct, and eventually this very self-confidence and feeling that he can not become an addict causes him to become unwary in his use of the drug and to unwittingly place too many injections too close together until, as the drug user says, "he wakes up some morning with a yen."

The following cases are further examples of the changes which the withdrawal symptoms bring about in the attitudes of the beginner:

Case No. 4. Mr. H. became addicted to the pipe in about 1909 when he was living in California. He was in a racket at the time, acting as messenger and in other capacities. He associated with underworld characters and went on parties with pimps and prostitutes where opium was smoked. He smoked along with the rest and liked it. The pimps told him that he would get hooked and warned him against it and said that he would be sorry sometime. He laughed and told them to mind their own business and went ahead.

When asked how he finally got hooked, he said, "Well, just the way most of 'em do. I kept using the pipe and one day I woke up gaping and feelin' like hell. My bones ached all over. Naturally, I didn't know what was the matter, and like they all do I told somebody how I felt, and naturally I told an addict. He said 'Jesus boy, you've got a habit,' and then I took a pill and smoked it and was all right."

Case No. 5. Mr. F. Mr. F. gave an account of how he became addicted in the following terms: "I told you that I first got acquainted with narcotics through a woman I was living with on Wabash. She used to go to the Chink joints to fix her yen. She smoked the pipe. She asked me to go with her and I went I first learned that I was hooked when I could not satisfy the girl with whom I was living and she told me that I was just like the rest of the birds. This did not mean much until I got under the weather and could not get the usual dose that I needed. Some of the boys in the honky tonks told me I was weak under the gills. I went to see a negro doctor and told him that I was sick. He asked me how I was sick and I told him that the pain I had began in my stomach and went out through my toes. He laughed and told me, 'It's got you kid. What is the usual dose you take?' I went from that doctor feeling that this could not have happened to me. I couldn't be affected the same as the rest of the muff drivers that were hanging around the corners, but I soon grew to know that the whole world would be against me the same as I had been when I had seen the condition of the other dopes around the south side. . . . It is not a pleasant feeling to be told that you are a dope. It is something like the doctor telling you that you are suffering from an incurable disease, although at the time I did not think so."¹

These cases reveal the inability of the non-addict to appreciate the nature and power of the opiate habit before he himself has felt the fatal "hook."

Dr. Schultz observed this fact that the drug user does not intend to become an addict, and that he is surprised the first time he notices the withdrawal symptoms. He wrote:

A drug user does not expect at first to become addicted, but addiction is impressed upon the individual as soon as the abstinence symptoms are severe enough to frighten him. He then awakens to the fatal knowledge that he is 'hooked' which information other addicts are only too glad to give him. When

¹Interviewed by an assistant, Mr. S. Orskey.

more of the drug is taken and the symptoms are relieved, this idea of the necessity of continuing its use is indelibly impressed on his mind and accepted without much resistance, as there is, besides the pain of withdrawal, considerable pleasure and relief also.¹

C. E. Sandoz also commented upon this situation as follows:

People who have acquired the morphin habit and do not know about withdrawal symptoms, sometimes do not realize that the latter are due to the want of the drug when they try to stop its use, but will attribute them to some other cause, and perhaps consult a physician. Occasionally in these cases, the physician himself does not suspect or recognize morphinism, and interprets the symptoms as due to some other diseased condition.²

The situation of one who deliberately makes tentative experiments with the drug may be described by saying that he looks in the wrong direction for the signs of craving; he expects to be lured toward the drug by the well-advertised, supposedly seductive pleasures associated with it, and is not prepared, in consequence, for the abstinence symptoms which steal upon him unaware and compel him, by fear of them, to go on using. Herein resides the significance of the drug user's selection of the term "hooked" to represent this situation, in which the withdrawal symptoms appear as a barrier which prevents the user from quitting when the original pleasure begins to fade and transforms the drug into a dire necessity.

The following case well illustrates how much of a bolt out of the blue addiction may in some instances be:

Case No. 6. Mr. G. was severely lacerated and internally injured in an accident. He spent thirteen weeks in a hospital, during which time he received opiates frequently, by mouth and hypodermically. He was unconscious part of the time and in considerable pain most of the rest of the time in spite of the opiates. He did not know what he was getting and noticed no effects at all except that his pain was relieved, though by no means eliminated, by the drug. He was discharged from the hospital and sent home. In several hours he began to feel very restless and uncomfortable, but had no idea whatever what was wrong. By night of the day he was discharged he began to be nauseated and soon began to vomit violently, bringing up blood. He became very frightened and feared that he was going to die. In the middle of the night he summoned his family doctor, who

¹"Report of Commission on Drug Addicts to the Honourable Richard O. Patterson, etc.," American Journal of Psychiatry, X (1930-31), 469-70.

²"Report on Morphinism to the Municipal Court of Boston," Journal of Criminal Law and Criminology, XIII (1922), 16.

also did not realize what was the matter, and administered a mild sedative and tried to encourage Mr. G. During the next day Mr. G's condition became steadily worse, and by the second night he was in such misery that, as he said, he began to wish that he would die. He again summoned his old family doctor at about two o'clock in the morning, and this time the doctor began to suspect that Mr. G. was suffering from opiate withdrawal and prepared an injection of morphin. Mr. G. remembers nothing after the injection was made except that the doctor sat down by his bed and asked him how he felt. He replied that he noticed no effects, but the doctor said, "You will in a few minutes." He then went to sleep and slept in perfect comfort for many hours. He did not know what he had been given or what was the matter until he woke up and was told by his wife and by the doctor, the latter saying, "Now we're going to have a hell of a time getting you off." His dosage was reduced and withdrawn completely in about a week. He remained free of the drug for a few days and then purchased a syringe and began to use it by himself.

In most of the cases cited it will be noticed that the addict learned about the withdrawal symptoms either from a doctor or from other addicts,--in a social situation, in other words. Even in those cases where the person makes his own interpretation of them, as in cases No. 2 and No. 3, it is clear that he does so and is enabled to do so by information previously acquired from social sources,--from addicts, from medical and other literature and teaching on the subject, and from popular sources. It does not seem reasonable to suppose that an individual would necessarily under all circumstances be unable to arrive at the correct interpretation of these symptoms without outside assistance or without prior information as to what to expect. Mankind apparently very early acquired a sufficient sophistication to do this, for the effects of the poppy have been known since time immemorial, but as in the case of other socially transmitted knowledge and customs, the individual drug user of today is not compelled to rediscover these truths by himself, but has them thrust upon him by his social environment.

It will be seen at once that if the drug habit can be shown to depend upon and originate from the withdrawal symptoms rather than from the hypothetical euphoria, this fact would offer a simple means of taking account of the initial reversal of effects as well as of the apparent paradox that the drug user uses the drug in confirmed addiction only to make himself feel "normal." In fact far from being an embarrassment, this reversal of effects becomes an integral and necessary aspect of the habit without which addiction would not be conceivable. The addict's normality also offers

no obstacles or problems to such a theory. As Erlenmeyer stated,

Precisely in the difference between the effect produced by a dose of morphin just once to a healthy person and that produced by morphin when habitually incorporated, lies the fatal development of the morphin craving. . . . If the withdrawal is made after this reversal, there comes into existence a 'vacuum' as Legewie says, i.e., the abstinence symptoms, that host of painful sensations, intolerable feelings, oppressive organic disturbances of every sort, combined with an extreme psychic excitement, intense restlessness, and persistent insomnia. In such moments the craving for morphin is born and rapidly becomes insatiable, because the patient has learned during the period of habituation, when abstinence symptoms set in after the effect of the last morphin dose had passed off, that those terrible symptoms are banished as if by magic by a sufficiently large dose of morphin.¹

The present viewpoint is also in accord with the addict's comparison of the opiate habit with the use of cocaine. He says "that there is no habit in cocaine" and that it is a "luxury," whereas morphin is a "necessity." Cocaine does not bring about a state of bodily tolerance during the first period of use and there is nothing in the regular use of it which corresponds to the reversal of effects in the case of opiate drugs. Moreover, no one under the influence of cocaine can be normal, and the discontinuance of this drug is not accompanied by any characteristic set of withdrawal symptoms of an organic or physiological character.² An addict further emphasized the contrast between the two drugs by characterizing the use of cocaine as a matter of "desire," whereas the opiate addict uses opiates because he has a "habit," or because he "has to."

Since it is the use of the drug for the conscious purpose of alleviating withdrawal distress which is the cause of the development of addiction according to the theory, it may be asked what happens if a person who has used the drug long enough to cause the symptoms to appear when it is discontinued, recognizes these symptoms, but resolutely refrains from using opiates to relieve them? We suppose that there is nothing extraordinary about the desire of a sick man to be well, and the original desire for the opiate as a means of relieving abstinence distress is the same as this desire

¹Terry-Pellens, The Opium Problem, pp. 601-602.

²For a comparison of the effects of cocaine and morphin in these respects see Joël-Frankel, "Zur Pathologie der Gewöhnung. II Mitteilung, Ueber Gewöhnheit und Psychische Gewöhnung," Therapie der Gegenwart, LXVII (1926), 60-63.

of the sick man to be well. One may, however, inquire why a person who is habituated and then makes the discovery that he is dependent upon the drug, does not from that moment refrain from further use of it and so free himself from the danger of addiction. The answer to this query is two-fold. In the first place, the individual is not apt to appreciate the significance of the choice that faces him, and secondly, even if he does have some notion of it, human nature is frail and weak in the face of suffering, and the persistence and intensity of the withdrawal distress is apt to wear down the finest and firmest resolutions. The temptation to use the drug to seek relief is strengthened by the ease of obtaining it and by the individual's failure to see any moral issue involved. He easily persuades himself that it is the logical thing to do, that there is no danger in it, and that he will not be trapped. This is further simplified for the person who has already been using the drug deliberately; for all that is involved for him is to repeat an act to which he is already somewhat accustomed. He will quit the drug at the first opportune moment,--tomorrow, or the next day, or next week, but not immediately. We have been unable to find a single instance, in our contacts with addicts, in the literature, or even by hearsay, of anyone who experienced the full intensity of the withdrawal symptoms in full knowledge of their connection with the absence of opiate drugs, who did not also become an addict through the use of the drug to alleviate these symptoms. This is perhaps to be understood by considering the severity of these symptoms and the impression that they make upon the uninitiated. We notice that case No. 6, Mr. G, on the second night of withdrawal, stated that "I prayed to God I would die." In a situation of this kind, the ordinary person can not be expected to indulge in subtle calculations of the possible consequences of his acts or permit such considerations to prevent him from obtaining relief if he knows how to obtain it. His situation seems to him to call for immediate action and not for speculation about a hypothetical future.

There is still the further problem of considering those cases in which the person is aware of precisely what to expect from the very beginning of his use of the drug, and therefore notices the withdrawal symptoms before they become severe. The most illuminating instance of this kind that has come to our attention is that of L. Faucher who, as we have already mentioned, deliberately

experimented upon himself, taking one injection every evening for six days in succession, then stopping for fifteen days and repeating the experiment. When his first series was concluded and during the seventh day, he describes his experiences as follows:

Ma première série de piqûres était terminée. C'était bel et bon, mais la nuit m'attendait. Pour y résister mieux, je m'aidais des circonstances. J'allais dîner en ville, je bus en compagnie, je fus au spectacle, je n'entraîs que fort tard. Je trouvais bêtes tous les divertissements; le vin me parut mauvais, le repas détestable. Toutefois, cette escapade m'avait fourni la diversion nécessaire. Je revins chez moi au jour levant, je me couchais, fatigué, et dormis un peu. La nuit suivant, je pus reposer en prenant 0.50 cts. de véronal dont l'effet fut sûr et assez prompt. Le jours suivants, à l'heure critique, je pensais invariablement à ma piqûre, je la désirais. Je sus me contenir.¹

He then goes on to describe the second series when he increased the dose much more than he had the first time. The euphoria was increased by this means, but it lasted a shorter time after each succeeding injection. He commented as follows upon his experiment:

Inutile de dire que ces heures séduisants laissèrent après elles un regret amer; que nous dûmes nous distraire artificiellement pour combattre le noir que nous envahissait, qu'il nous fut indispensable de nous astreindre, pendant quelque temps, à une vie très active, pour ne pas trouver la vie 'bête' comme un vulgaire intoxiqué. Dans le domaine intellectuel, nous conservâmes pendant quelques jours une apathie intense, et une remarquable inaptitude au travail, un manque de décision très sensible ...²

Concerning his motives and attitudes toward the experiment the following comments are of interest:

Nous n'aurons pas le front de dire que nous avons été poussé à notre expérience seulement par la curiosité scientifique; il y a toujours quelque chose de malsain au coeur de l'homme. Nous pouvons affirmer cependant qu'à l'avance, nous avions réglé toutes les conditions de notre tentative; nous voulions bien nous morphiniser, mais nous étions aussi bien décidé à ne pas nous intoxiquer définitivement. ... J'étais très fier de n'avoir pas cédé au penchant acquis, toutefois, si je m'étais examiné sévèrement, j'aurais constaté avec quelle impatience j'attendais le moment licite de retomber dans mon habitude. ... Elles nous ont aussi montré en petite ce que pouvait être l'état de besoin. Pour contempler un tableau séduisant, nous avons entrevue l'imminence d'un effrayant danger. ... L'intoxiqué est un homme perdu; qui ne peut plus reculer. On signale à cette règle de bien rare exceptions.³

¹L. Faucher, Contribution à l'Étude du Rêve Morphinique de la Morphinomane, Thèse de Montpellier (1910-11), p. 18.

²Ibid., p. 23.

³Ibid., pp. 17-26.

It is apparent from this account that six days of use was sufficient in this case to produce a condition bordering on addiction, and suggests that the use of the drug to avoid the abstinence symptoms even during their incipient stages very quickly leads to the development of the attitudes that characterize addiction. Faucher, of course, had advance knowledge as to what to expect, and therefore noticed and understood the symptoms at once. He states that he first noticed them after about the third or fourth dose, and that by the time the fifth dose was due he had begun to look forward to it and to want it. To this case we may contrast the patient in the hospital who may receive the drug for weeks, months, or even years in ignorance of what he is getting and be none the worse for his experience when the drug has been successfully withdrawn. We described Faucher's experience to an addict and his comment was that he was "half-way hooked." Evidently the attitudes and knowledge with which these experiences are approached determine whether habituation will lead to addiction or not.

As another borderline case showing how rapidly and how early the symptoms of psychological dependence upon the drug are established, we may consider the following instance:

Case No. 7. Mr. W., while in his teens, had an affair with the wife of a doctor who was much younger than her husband. She was a drug addict, and on his request gave the boy an injection. He liked the effects and returned for more and used it regularly for a few weeks until the doctor sent his wife away somewhere,--presumably for a cure. He then discovered that the boy had been using the drug when he became ill because of its being stopped. He took the boy in hand and reduced the dosage gradually so that the withdrawal distress was reduced to a minimum. The entire experience from the first injection to the complete withdrawal of the drug lasted about six weeks, and the maximum dosage attained was about one grain a day. The boy was not in a position to know how to renew his supply or to make the money necessary for a habit. When interviewed he had not used the drug for nine years, he said. He was using marihuana however, and was apparently not on good terms with his wife and children. He stated that he felt an attraction toward opiates which he compared to the attraction that the contemplation of dizzy heights exercises upon some persons,--a mingled feeling of fear and desire. The fact that this man was using marihuana rather regularly when he was interviewed and that he was with a drug addict, suggests the strong probability of his returning to opiates. We only had an opportunity of talking to him once and do not, therefore, place an unqualified confidence in his story, giving it for whatever it is worth.

Unfortunately, borderline cases of this type appear to be exceedingly hard to find, and definite conclusions regarding the actual

length of time in which addiction may be established when the drug is used to avoid the withdrawal distress, cannot be made until more instances permit a closer examination of the various possibilities of this initial situation. It would, for example, be interesting to know what the effects would be if a person suffering from the full intensity of withdrawal distress were instructed as to what was wrong with him but prevented from obtaining any of the drug to prove it to himself. Two possibilities are suggested; either the experience would serve as a warning and a deterrent to further use, or the knowledge of the means of relief would create something like the usual desire and bring about a tendency to resume the use of the drug at a later time. The question is further raised whether an individual could truly be said to have the knowledge that opiates would relieve his suffering until he had actually tried it. In the absence of cases illustrating these problems of a borderline nature, no definite conclusions regarding them appear to be justified.

The problem still remains to be considered of how the theory accounts for the development of the essential defining characteristics of drug addiction which we have described as consisting principally of the following four elements or aspects: (1) a desire for and dependence upon the drug, (2) a powerful impulse to increase the dosage beyond the point of bodily need, (3) an awareness of addiction and the definition of oneself as a "junkie" or addict and (4) the tendency to relapse into the habit when the drug has been withdrawn. This last point will be considered in a later chapter.¹

The Desire for and Dependence upon the Drug

Prior to the point at which withdrawal symptoms compel a person to go on using the drug it is used in a different manner and for different motives than it is later. At first it may be used to alleviate pain, to produce pleasure, or simply in a casual manner to be sociable and do as others do. One of our addicts stated that, prior to trying drugs, he had regarded needle users with disgust and had also thought of opium smokers as living in a

¹"Cure and Relapse," chap. vi. This refers to the complete dissertation on file only in the University of Chicago Libraries.

different world. His own story was as follows:

Case No. 8. Mr. A. R. began to mingle with "sporting people" and gamblers before he was twenty. He was not in very good health and began to spit blood and had been spitting blood for more than a year when another older man who smoked opium noticed it and made inquiries. "You'd better smoke hop" was his advice, and Mr. R. soon took this advice and accompanied this man to an opium smoking joint. He liked his first trial of the drug very much. "I kept myself so full of hop for the next eight months that I didn't have a chance to find out about being sick. I just liked it and used it. I didn't think about whether it was habit forming or not." Then when he happened by accident to omit smoking, he began to yawn and to manifest the usual symptoms and without any great difficulty he realized that it was the opium that caused it, and he then went on using it for about four years without even thinking of quitting. He stopped spitting blood very shortly after beginning to use the drug, but does not pretend that this is the reason why he continued to use it. He states that he liked opium smoking so much at first that he used far too much and got himself into a state of drowsiness and sluggishness which he found unpleasant.

The casual way in which the drug was first used may be compared to the way in which a child may sometimes eat candy simply because he enjoys its taste and without any thought of ultimate consequences. The opium was, in other words, psychologically desirable at first, but unlike candy, it became a psychological necessity with continued use and did not cease to be so even after its desirability was gone. Mr. R. still regards opium smoking as the best way of using drugs, but is now using a hypodermic needle and taking the drug intravenously,--not because he likes to, but, as he himself says, "because I have to." This element of compulsion is naturally absent during the initial use of the drug.

Another illustration of the casual character of the initial use of the drug and of the way in which it is valued before withdrawal symptoms are experienced is the following:

Case No. 9. Mr. X, at about the age of eighteen, began to live with a prostitute who smoked opium. After spending his first night with her he describes his subsequent experiences as follows, "We slept most of the day until late afternoon, and when I woke up she got up and got out a tray out of the dresser drawer and brought it over and placed it on the bed. I had seen opium pipes two or three different times since I had been working on the messenger force, so I recognized the contents of the tray as an opium layout. She told me she was a smoker and asked me if I had ever smoked hop. I told her I never had and she said that I ought to try it once as she was sure I would like it. He then smoked and was nauseated by it. "I suddenly became very nauseated and had to leave the table to vomit. I vomited till there was nothing left on my stomach and I was still sick so I went to bed. She wet some towels

with cold water and put them on my forehead and after an hour or so I fell asleep. I slept two hours and when I woke up I felt all right again, I went to work that evening as usual, and every time I would sit down in the messenger office I would feel drowsy and fall asleep and my body would itch all over and when I scratched it would feel awfully good." The next night the girl again offered him a smoke. "It made me so sick the night before that when she started cooking the opium this morning it seemed to kind of nauseate me again. So I declined and told her that I didn't feel very well, and I wanted to get some sleep as soon as we were awake she again got the tray and lit the lamp and got back into bed and started to cook her opium again. She cooked and smoked six or eight pills as I lay there watching her and then she again offered me some. I told her that I was afraid to smoke again for fear that it would make me as sick as I was the night before. She told me that it wouldn't make me sick this time, and she coaxed and coaxed until I finally gave in and said all right, that I would smoke a couple pills with her just to be sociable. After I had lived with her for six or seven months she told me that she had a letter from a sister who was very sick, so she asked me if it would be all right if she went to Helena to see her. I told her to go if she wanted, so I gave her enough money to go with and took her to the train. We had smoked just before she left and she had packed the layout in a small handbag and took it with her. I worked that night as usual and everything went along fine, until I went home in the morning, and then I started to get sick. I went to bed, but I couldn't sleep. Towards evening I began getting awful cramps in my stomach and was also nauseated and started vomiting. I had not eaten any food all that day, so there was nothing on my stomach but a little water, and when I started vomiting nothing came up but green bile and the more I vomited the sicker I got. I finally rang the bell and sent for a messenger, and when he came I told him to tell the boss that I was sick and wouldn't be able to come to work that night. The messenger asked me what was wrong and I told him I didn't know. I told him that I had awful cramps and was vomiting all the time. He asked me if I had been smoking every day with my girl and I told him I had. Then he asked me if I had had any opium since she had gone to Helena, and I told him that I hadn't. He told me that was the reason why I was so sick. . . . He looked in the drawer and found a jar of opium, so he cooked some and gave me three pills. He went to the restaurant and got a pitcher of black coffee and told me to swallow the pills and drink some of the coffee. I did as he told me, and laid down on the bed again, and in about ten minutes I began to feel all right again. This was the first time I had missed smoking in the six months that I lived with this girl. . . .¹

It is evident that this boy was very little preoccupied with opium during these six months. His chief concern was, very naturally, with the fact that this was his first major sex experience, his

¹From documents collected by Mr. Bingham Dai in a separate study at the University of Chicago. It may be mentioned that Mr. Dai did not share the view-point presented here.

apparent unconcern over his future supply of the drug is striking and contrasts sharply with the behavior of the confirmed addict.

Keeping in mind the casual or episodic character of initial use before withdrawal symptoms have achieved dominance, let us see how the addict behaves when his supply of the drug is threatened or is actually removed. Torrance and Light describe the behavior of addicts who voluntarily took the cure under their care as follows:

After a person has become firmly addicted to the use of opium or one of its derivatives, we have reason to believe that the problem of securing and maintaining an adequate supply of the drug comes to mean the major purpose of his existence. To an extraordinary degree he comes to develop a sagacity and persistence in this direction which may out-match the abilities of those conducting the investigation. The ingenuity that is displayed in maintaining channels of supply is amazing. We have come to believe that practically every word which the addict utters, and every deed which he may perform are based directly or indirectly on a motive concerned with the maintenance of these channels of supply. He will plead with or threaten those about him who are in a position to supply him with the drug. Whatever method he may use has been previously determined by careful consideration on his part as to which may be the more successful. . . . When the addict is admitted to the ward and understands that the drug is available and will be given for a time, he is amenable. He is co-operative in anything which does not interfere with his daily dosage. . . . But when the effect of the drug passes off, all the sagacity and ingenuity on his part are brought into play, as only those who have been associated with this type of person can appreciate.

Not only must the observer forestall the schemes which the addict is devising to obtain the drug, but he must defeat plans, made before the admission, for the restoration of his supply should his craving become unbearable. He may have attempted to bring the drug into the ward concealed in his clothing, jewelry, or in any orifice of the body large enough to hold it. . . . Should his attempts to bring a certain quantity into the ward have failed, he resorts to plans devised to obtain it from friends, outside of the hospital, or he schemes with fellow addicts who are about to be discharged, and who have signified their intentions to him of immediately returning to the drug. He will attempt to bribe anyone who appears open to temptation. Letters will come addressed to him which have been saturated with the drug, dried, ironed out, and then inscribed with some harmless message. . . . Sometimes the drug is concealed under the stamp of an envelope. The wooden stem of a match changed into a cylinder has been found to contain a drug. He will accuse or betray his best friend in order that he may obtain favor from those in charge. Telegrams and telephone messages will arrive, bringing the news of the death of a member of the family, asking his immediate return home. These are but a few of the methods employed to obtain drugs, and unless forestalled, they will ruin any studies made during the withdrawal period. In addition, there is always danger that the patient may be aided by a fellow addict who may have drugs

in his possession, or by a drug peddler who will furnish drugs without charge when it insured him the return of the addict with funds in the near future. [Concerning the withdrawal symptoms, the authors state], The intensity of these symptoms is undoubtedly subject to control on the part of the patient. We have stated that his mode of behavior is governed largely by his attempts to impress his sufferings on those observing him. On the other hand, if there is a possible chance of obtaining his liberty from the ward, he will state, though feeling ill, that he "feels fine", has an "excellent appetite," and is "sleeping well." He may have been successful in smuggling and administering the drug to himself and yet feign withdrawal symptoms so as to allay suspicions. When it is time for his discharge, he may feel well from the effects of the drug that he has been able to obtain through smuggling.

The scopolamine treatment that we have employed has always been stated by the patient, who has been previously treated and who wishes to enter the ward, to be "the best he has undergone, all others being torture." When he is just recovering from the effects of the scopolamine, it is the 'worst' all others being excellent. When the time approaches for his discharge, and he is anxious to obtain his liberty, the treatment again becomes the most successful he has ever had; he appears to have fully recovered his normal strength, when he may still be so weak that he may not be able to walk several blocks without collapsing.¹

The fact that the patients here described, volunteered, as already emphasized, to have the drug taken away from them, and then behaved in this manner gives some slight inkling of the desperate pre-occupation of the addict with the maintenance of his supply, which Torrance and Light evaluate correctly as his primary concern. It is easy to see that this concern over the maintenance of supply arises from the addict's anticipation of what will happen if his supply is cut off,--it depends, in other words upon his anticipation of the withdrawal symptoms. Prior to his realization of the fact that there are withdrawal symptoms or what their nature is, he is naturally unconcerned over the prospect of the failure of his supply. He does not realize that the drug has become a daily necessity, but supposes that it is like many of the other pleasures of life which may be enjoyed and left alone for a time. The sentiment expressed in the following words of an addict remains unintelligible to him as long as the distress of withdrawal is absent:

To the opium consumer, when deprived of this stimulant, there is nothing that life can bestow, not a blessing that man can receive which would not come to him unheeded, undesired, and be a curse to him. There is but one all-absorbing want, one engrossing desire--his whole being has but one tongue--that

¹Light, Torrance, Fry, Kerr, Wolf, Opiate Addiction (1929) pp. 7-12.

tongue syllables but one word--morphia.

Place before him all that ever dazzled the sons of Adam since the fall, lay sceptres at his feet and all the prizes that vaulting ambition ever sighed and bled for, unfold the treasures of the earth and call them his; wearily, wearily will he turn aside and barter them all for a little white powder.¹

From his experience in avoiding the withdrawal symptoms which recur after each injection, the addict comes to conceive of himself as being supported, or as he says, "carried" or "held up"² by his drug at all times, and the originally casual or episodic use of the drug is changed into a constant sense of dependence.. Whenever he omits a regular dose he feels himself begin to slip into a state of mental and physical depression and suffering which he feels is beyond his capacity to endure. From the realization of being constantly supported and sustained by the drug comes the fact that the addict's normality is a sort of self-conscious or introspective normality, for he knows that it depends upon the presence in his body of a sufficient quantity of the opiate. The normality of the chronic drug user therefore becomes a different thing when the individual becomes aware that it is the drug that causes it.³ The addict, when asked how he feels, may, if he has his supply, say "Fine!" and perhaps add, "The shot I had this morning is holding me up well." It is somewhat as though an ordinary person, when asked the same thing, were to reply, "I am feeling fine. The dinner I had this noon is holding me up well." No doubt if food were scarce such a conception of it might also prevail, but most of us do not have that constant sense of being supported by our digestive systems.

The desire for opiates, which begins as a desire to be relieved of physical suffering which the opiate itself has indirectly caused, grows rapidly with the continuation of the drug, for every additional dose makes it more difficult and painful to quit and every fruitless struggle to free oneself of the habit only impresses upon the mind of the person his imperious need for the

¹"Sigma," "Opium Eating," Lippincott's Magazine, I (April, 1868), 406.

²See glossary of addict argot in Appendix A (of the complete dissertation).

³See also chap. vi, "Cure and Relapse" (of the complete dissertation) for a further discussion of differences between the addict's "normality" and ordinary "normality."

drug. The beginner does not usually have the information about the habit that would enable him to be able to fight it intelligently and effectively, and the expenses and discomforts associated with the habit in its early stages are also not apt to be of a sufficiently pronounced character to give any powerful motive for making the persistent and prolonged effort necessary to out-last the distress of withdrawal. Consequently, by the time the beginner has fully awakened to the seriousness of the situation, the habit is likely to be irrevocably fastened upon him,--in other words, he is "well hooked."

The most substantial pleasure associated with addiction is probably the relief afforded by the drug and the anticipation and exaggeration of this relief in the mind's eye. To a considerable extent, the addict's life is a life of anticipation,--anticipation of withdrawal, anticipation of a loss of supply, and anticipation of relief which is sometimes glorified as something pleasurable in itself. When he does suffer, he tends to pretend or to think that he actually suffers more than he does.¹ During the initial stages of withdrawal every stomach cramp, which DeQuincey described as being like "the gnawing of some imprisoned reptile," becomes endowed with some of the significance of all the other stomach cramps the user knows there are to follow, and the pain is all the more unendurable because the means of relief are known to be simple.

The Increase of the Dose

Though not every addict increases his dosage far beyond the point of bodily need, it is probably true that all have the impulse to do so, and if they succeed in controlling this tendency, they do so only by means of a resolute act of will and through calculated self-control. The addict's dose may be divided into two parts; first, the daily quantity which is actually necessary for the continuance of comfort, and secondly, the amount over and above this

¹T. D. Crothers, Morphinism and Narcomanias from Other Drugs (Philadelphia: W. B. Saunders and Co., 1902), p. 222, states that "The addict's conceptions of pain are very largely anticipatory and imaginative and associated with mimicry." The implication in this statement that the withdrawal distress is unreal or slight is incorrect, but the author evidently perceived the importance of the imaginative and anticipatory aspects of the habit which we are emphasizing here. It is only fair to repeat that the withdrawal distress is no trivial matter as we have pointed out elsewhere. The very fact that it is actually very severe accounts for and enhances its influence in the imagination of the addict.

first quantity which the drug user believes to be necessary. This de luxe dose, as it has been called,¹ represents for the most part, just so much more expense and trouble, for its physical effects are apt to be bad. It is, nevertheless, usually regarded as a necessity by the user and he will often move heaven and earth to maintain a daily consumption of the drug that is many times the amount which would result in a maximum of physical efficiency and a minimum of trouble. The de luxe dose may be said to be a reflection of a psychological need rather than a physiological one. Its psychological character is evident from the fact that an addict using vast sums of the drug daily may have his amount cut to a fraction of its former level and be none the wiser if the reduction is carried out without his knowledge.² He tends, in fact, to improve in condition when this is done,³ but if he attempts to regulate his own reduction, he finds it exceedingly difficult or impossible, even though he is fully aware that he will feel better and have less expense if he does so.

This irrational tendency to increase the dosage beyond the point of diminishing returns may be interpreted quite simply in terms of our theory as the result of an increased sensitivity to the withdrawal symptoms.⁴ As the drug user acquires experience with these symptoms, he becomes expert in detecting the very first signs of their appearance. These signs then become endowed, as we have pointed out, with the significance of the further distress that is to follow, and lead the addict to magnify the extent and importance of these early symptoms. He feels sicker than he really is, and inasmuch as he regulates the time of each injection by the

¹See for example Terry, Pellens, op. cit., p. 553. M. Roget Dupouy, following Joffrey called this part of the daily dose "the proportion of luxury." See Terry, Pellens, op. cit., p. 557.

²See for example case no. 164, in Dansauer-Rieth, Ueber . . . (1931), pp. 109-110.

³This has been discussed in chap. 11 (of the complete dissertation).

⁴For a more detailed consideration of the nature and implications of this increased sensitivity to withdrawal symptoms, see also chap. vi (of the complete dissertation). In general the increased sensitivity to these symptoms is the equivalent of an expansion of their meaning so that more and more vicissitudes of life are interpreted as withdrawal symptoms and the utility of the drug as a means of control is thereby multiplied. As the purposes for which the drug may be used increase, the impulse to use increased amounts follow.

way he feels he is impelled to use the drug somewhat sooner than before. Then, having taken the dose somewhat prematurely, he finds that he does not "feel the shot" the way he did before. The effects of an injection are noticed in proportion to the contrast between the states before and after the dose takes effects, so that it follows that in order to "feel his shot" the addict must now increase the size of the dose. The impact of the drug has become a symbol of security from withdrawal to him, but if he takes his injections a little sooner than before, these symbols are blurred, so that in order to restore them he must use more. This process is aggravated by the tendency of the organism to adapt itself to any sized dose, and also by the use of the drug for remedying the bad effects which an already excessive dosage may be causing. Caught in this vicious circle the drug user's consumption of narcotics often reaches figures that are limited only by the tremendous expense involved.

Another motive involved in some instances is that the addict, realizing that he is trapped anyway, and that he must use the drug, throws caution to the winds and tries to get what he can out of it. Having learned to value the physical impact of the drug for its symbolic significance with regard to the quality and quantity of the drug consumed, and as an assurance of freedom from the threat of withdrawal for a period of time, he may strive to enhance these symbols and to secure thereby a measure of satisfaction, and to create the delusion that he feels well even at the expense of a greater financial outlay and of actual discomfort.

The awareness of addiction.--It is obvious from the preceding discussion that the awareness of addiction, the admission that one is "hooked," also dates from the moment when a person has been compelled by the distress of withdrawal to go on using the drug. The full realization of addiction comes gradually and may be said to be reasonably complete after the beginner has succeeded in staying off the drug for a period of time, perhaps with the best of intentions, and then found himself using it again. The first experience with withdrawal will convince the user that it is hard to quit, but very often he will continue to cherish the belief that even though it is hard he will succeed,--some day. The first awareness of dependence, of being "hooked," and of being confronted with the fact and being asked why he doesn't quit if it is easy, may lead to a revulsion against the habit and against the threat

of becoming a despised "dope fiend." The net result of this struggle is to further impress the fact of his addiction upon the individual. The struggle to quit is an almost invariable reflex of the awareness of addiction.

As soon as the drug user realizes that he must begin to plan for his future supply of the drug, he becomes ripe for assimilation into the drug addict's culture, for it is now of vital interest to him to know addicts. It is from them that he obtains his supply and from them that he learns the various devices and customs by means of which the drug addict meets his problems and maintains his supply. The following case is given as another example of this process:

Case No. 10. Mr. Q., a professional criminal, began to use drugs in about 1925 when his wife died. He drowned his sorrows with liquor, and one night as he was coming home after considerable indulgence, he was accosted by a beggar addict who was an addict from the fact that he had been pointed out to him as such. He determined to play a joke on the beggar and pretended to arrest him, and then dropping his pose, he decided on the spur of the moment to try some morphin. He asked the beggar to get some, pretending he was an addict, and together they went to the peddler who sold to the beggar and the purchase was made. Mr. Q. took a very small injection and gave the rest to the addict. He enjoyed the sensation produced by the drug very much.

Several weeks later this addict looked him up for the purpose of obtaining help in getting a supply, offering to share the returns fifty-fifty. Mr. Q. had had no intentions of using any more of the drug but agreed to help the addict. When he had done so the man insisted that he accept his share of the booty. Mr. Q. at first refused, and then accepted and took the drug home and forgot about it for some time as he had no means of taking it. One day a friend of his who ran a small business establishment moved into new quarters where he found an all-metal hypodermic syringe concealed on the molding. Mr. Q. asked to take the syringe home, and finding that it worked he began to use his little supply of morphin. When he exhausted it he noticed that he wasn't feeling entirely right, and remembering that morphin had helped him before when he felt this way, he decided to try to buy some more. He went down to the place where he and the beggar had first purchased some and there, by sheer accident, met a man who had a rather large bottle of the stuff which he was willing to sell cheap. Mr. Q. went on, "Well, I took it home and I really got hooked on that bottle of stuff. Before I ran out I knew that I'd have to have more and I went out and made connections."

When asked how he knew he was hooked, he explained, "I used to take a couple of shots a day of the stuff and then I noticed I was getting to depend on it, so I thought I'd do without it one day and I missed my morning shot. Well, along in the afternoon, I was feeling rotten and yawning all the time. One of the fellows was an addict and he asked me if I had a yen.

"What the hell's a yen?" I asked, and he said it came

from having the drug habit. He asked me if I was taking morphin at home and I said I was, about two times a day.

"When did you have your last shot?"

"Yesterday afternoon."

"And you didn't have anything this morning?"

"No!" He asked me if my legs hurt and they did.

"Why, Jesus Christ," the man said, "You've got a habit and don't know it."

I went home and on the way I thought I could hardly make it because my legs hurt so much and were so wobbly. Well, when I got home, naturally I was feeling bad and wanted to feel better so I fixed up a shot and thought I would see if that fellow was right. In a few minutes I was all right, feeling as lively as a spring chicken. Naturally, I began to find out what I could about the habit by talking to addicts and by reading.

By way of contrast to this case let us examine another case in which withdrawal symptoms occurred but in which the drug was not used to relieve them:

Case No. 11. Mrs. D. received morphin for a period of about a month on account of an illness. A relative of hers was a doctor and he was free and easy with morphin, leaving it at her bedside. She does not recall how much she used or how often, and noticed only that after a dose she would feel stimulated and want to talk or play cards. She noticed no let-down when the effects of the tablets wore off. After approximately a month, her condition was improved and the drug was to be discontinued. Withdrawal symptoms appeared and were reasonably severe though they were not accompanied by nausea or vomiting. She realized fully that these symptoms were due to the cessation of the drug, but noticed that they soon began to diminish in intensity. She noticed chiefly restlessness, nervousness, and aching joints. A number of times it occurred to her to try morphin, but inasmuch as it was no longer called for and because she recalled that it was not supposed to be good practice to go on using it when the illness was gone, she did not do so. In two days the symptoms were gone. She asserts that if the distress had been severe, or if her original ailment had returned, she would unhesitatingly have taken some more of the drug because she is quite sure she could not have become an addict even though she had gone on with it.

This confidence of the person who has used the drug but has not been properly "hooked," that he has immunity to addiction, is as we have seen, a common phenomenon immediately preceding addiction. Few normal healthy persons believe that they can become addicts, and this very self-confidence facilitates the process of getting hooked.

Summary and Conclusion

According to the theory of the drug habit that has been outlined, addiction to opiate drugs is essentially based upon the

withdrawal symptoms which occur when the drug's effects are beginning to wear off, rather than upon any positive effects often erroneously attributed to it in continued use. This theory, though simple in form, has considerable explanatory value and offers a means of accounting for a number of varied and paradoxical aspects of the habit, such as the addict's claim that he feels only normal under the influence of the drug, and his tendency to increase the dosage to a point where the use of the drug becomes much more unpleasant and burdensome than it need be. It also readily makes the constant preoccupation of the addict with the drug intelligible and explains how the individual has the unpleasant and unwelcome definition as a "dope fiend" forced upon him.

The initial psychological experience which marks the beginning of addiction and which forms the matrix in which the complex of symptoms which distinguish addiction are generated, may be analyzed into the following essential and interrelated steps:

1. The perception of the withdrawal symptoms as being due to the absence of opiate drugs, followed by
2. The use of opiates as a cure for these symptoms and for the conscious purpose of keeping them suppressed, resulting in
3. A desire for opiates as a means of relief, a constant sense of dependence upon them, and preoccupation with the means of obtaining them.

Out of the growing sensitivity to the withdrawal symptoms which develops from this process, there inevitably arises a powerful tendency to increase the dosage beyond the purely physiological requirements of the body. It will be seen in a later chapter that the mental attitudes and the knowledge which are built up in this manner persist long after the drug has been removed from the body and the patient has been restored to health, and act as predisposing factors toward relapse.

One of the principal advantages of a theory such as the one outlined is that the well-known and undeniable physiological aspects of drug addiction are not ignored or denied but are accounted for in a rational and intelligible manner, for it has been shown that these physiological conditions are not in themselves sufficient to cause addiction and only operate in this manner when they are understood by the individual who experiences them. They must be conceptualized and incorporated into a system of ideas before they enter significantly into the determination of human conduct.

As we have seen, each of the various possible interpretations for these symptoms presented by the environing culture carries with it its own special implications, or plan of action, with regard to the thing represented. The person who believes them to be the beginning of an attack of grippe acts accordingly and consults a doctor; the person who believes them to be due to the absence of opiates also acts accordingly, tries the drug to see if he is right, and becomes an addict, acquiring the customs and attitudes which other drug users impart to him. The application to his own conduct of the generalized symbols which the group applies to his conduct also means that the drug user applies to himself the attitudes and sentiments which are current in his social milieu.¹ At first he struggles against the unpleasant implications involved, but eventually he is compelled to adjust himself to these conceptions, to admit that he is a drug addict, and to seek to rationalize his own conduct and to make it intelligible and tolerable to himself.

The emphasis which we have placed upon the significance of the assimilation of the purely physiological conditions into a self-conscious symbolic structure, has been stressed by the Durkheim group of sociologists in France and was admirably stated, in an aspect that may be directly applied to the present problem, by C. Blondell:

Nous ne saisissons pas la réalité telle qu'elle est, mais telle que la conçoit et la veut la collectivité à laquelle nous appartenons. ... Et ceci vaut non seulement de la réalité extérieure, mais aussi de la vie intérieure; réfléchir, c'est parler sa propre pensée; prendre conscience claire d'un état d'âme, si personnel soit-il en apparence, c'est le saisir dans le cadre que la collectivité lui a tracé, affecté de la valeur qu'elle lui attribue, c'est la confondre avec ce cadre et cette valeur mêmes.²

This process of conceptualizing one's own subjective experiences involves the imposition upon a person of an interpretation derived from social sources. It pre-supposes the individual's membership in social groups, and his ability to communicate with his fellows in terms of language symbols. Addiction is therefore a phenomenon confined exclusively to man living in society. It depends

¹George H. Mead has given a significant account of how this process takes place and is made possible.

²George Dunas, Traité de psychologie (Paris: F. Alcan, 1924), II, 412.

upon higher mental faculties and sophisticated conceptions of causality, and of pharmacological effects, which in turn depend upon the existence of social traditions and an accumulated body of knowledge.

CHAPTER V

THE ESTABLISHMENT OF THE HABIT

The theory that has been outlined calls for a *résumé* of the evidence with regard to the role of the withdrawal symptoms in addiction to determine whether or not there is any negative evidence which might invalidate the proposed viewpoint. In other words, does the proposed explanation fit all cases of addiction? Are there cases in which addiction could be said to have been established in some other way than that outlined? Are there persons who have used the drug consciously and deliberately to avoid withdrawal distress which they understood and still not become addicted? We now wish to sketch the main lines of evidence which seem to us to offer the means of testing the proposed theory and of supplying answers to questions of the type stated above.

As far as the ordinary run of cases of drug addiction which were interviewed are concerned we have found none that gave any reason for doubting the proposed explanation. It is quite certain, even self-evident, that all drug addicts experience and understand withdrawal symptoms and that no one would use opiates in increasing amounts every day in view of the well-known diminution of positive effects if it were easy to quit,--as easy to quit, as it is, for example, to stop eating ice-cream when one begins to notice that he has had too much. All of our cases could be grouped into two main classes with respect to their first experience with withdrawal symptoms. The first class became acquainted with them suddenly in a critical moment occasioned by the distress of withdrawal in an acute form. The other group became acquainted with them in a gradual process, either in terms of advance information about them, as in the case of Louis Faucher, or on the basis of recurrent experience with the symptoms in a mild form resulting in a gradual realization of their significance. In this latter case, what usually happens is that the person who is using the drug every day suddenly becomes mildly apprehensive and without realizing that he is an addict nevertheless decides to quit using the drug or to try it and to see what happens. When he delays an injection for

a half-hour or so, or perhaps a little longer, the withdrawal symptoms cause him to change his mind about quitting at once and he renews his use of the drug and then realizes somewhat more fully than previously that perhaps he is caught. Through repeated experiences with these brief attempts to stop he may gradually build up a full realization of his dependence upon the drug without actually ever passing through the critical type of experience with these symptoms in their severe form that characterizes the majority of the cases.¹

Addicts of this second type may not spontaneously emphasize the role of withdrawal symptoms in making them addicts simply because the experience came to them in a gradual and unimpressive manner or because the whole thing appears self-evident to them. Nevertheless, it is an invariable rule that addiction in all cases has followed subsequent to a period of regular use of opiates for a sufficient time to cause distress when they were removed. Thus Terry and Pellens state, speaking of the causes of addiction, "It is self-evident that there can be but one direct cause, namely, the continued taking of the drug over a sufficiently long period to produce upon withdrawal, distress of some kind to the patient."² Formal attempts at a definition of addiction invariably include withdrawal distress as one of the essential aspects. Kraepelin asserted:

The severity of the symptoms of withdrawal varies to an extraordinary degree. It depends upon the size of the dose, the duration of the addiction, the general condition of the patient, and the individual tendency. Sometimes the disturbances are limited to a little diarrhea, sweating, excitability, and insomnia, while in other patients the condition becomes ex-

¹Cases No. 3, 7, and 8 cited in chapter iv are illustrations of this more gradual process of becoming addicted. One addict stated that he first experimented with the drug feeling quite confident of his own capacity to resist. Later he "began to be afraid of himself" and in a gradual process of transition he came to the point where he "had to have it." He said, "Whenever I was full of it I'd wish that I wasn't using it, but when the effects begin to wear off I'd go out for more of it." In this entire process no sudden realization of addiction occurred, and even when encouraged to go into a detailed description of the process, this addict continued to describe it as something gradual and continuous without any sudden changes of attitude or point of view on his part. Between this case and those in which the realization of addiction comes suddenly in connection with a severe and prolonged withdrawal there are all degrees of graduation.

²Ch. E. Terry and M. Pellens, The Opium Problem (New York: Committee on Drug Addiction, 1928), p. 134.

ceedingly severe, threatening life. My experience, however, does not include an instance of withdrawal wholly without discomfort. When the manifestations are very mild or the health altogether undisturbed, morphin is unquestionably being supplied clandestinely.¹

As a matter of fact the addicts interviewed not only regarded withdrawal symptoms as a perfectly obvious and essential aspect of addiction, but also viewed addiction without them as a thorough-going impossibility which they were not even able to imagine. It is for this reason that they say "there is no habit in cocaine," and it is withdrawal symptoms that they have in mind when they consider whether a drug is "habit forming." This conception of a "habit," it has been indicated, is not identical with the usual common sense idea of a habit.

A consideration of a number of aspects of the drug user's argot reveals in an unmistakable manner that the role of the withdrawal symptoms in addiction and in the beginning of addiction is central, for without devoting conscious reflective thought to the matter the addict has nevertheless employed a number of terms in ways which admit of but one interpretation.²

Of primary importance in this connection is the use of the word "hooked" as synonymous with "addicted." To begin with, the mechanical illustration of the nature of addiction embodied in this term could scarcely be made more expressive. The reference to withdrawal symptoms is too obvious to need elaboration. Anyone who is "hooked" has used the drug long enough so that if he tries to stop the withdrawal symptoms which occur will compel him to go on using it. Naturally, the addict is not faced with the necessity of making such an academic (as it seems to him) distinction as that between those who are hooked and know it and those who are hooked and don't know it. All of his dealings are with persons who have been hooked and who know it, and if someone should happen to fail to realize what his first experience of withdrawal distress was caused by, the addict attaches little importance to enlightening such a person. His own tendency is to identify withdrawal symptoms with the drug habit, and to him a person who is suffering withdrawal distress already "has a habit" anyway. It

¹Quoted by Terry and Pellens, op. cit., p. 197.

²For addict argot see Appendix A (of the complete dissertation). Compare also D. W. Maurer's "The Argot of the Underworld Narcotic Addict," American Speech, XI (1936), 116-27.

is simply regarded as interesting or odd that some addicts do not understand these symptoms the first time. The possibility of receiving the drug without knowing it, suffering withdrawal symptoms when it is removed without realizing it, and not becoming addicted, is admitted by the addict; but such persons are not regarded as being "really hooked," implying that there is involved in this term the implicit assumption that the process of being "really hooked" involves not only withdrawal symptoms, but also the realization that these symptoms are due to the absence of the opiate. Furthermore, when an addict inquires of someone he meets for the first time, "Have you been hooked?" an affirmative answer necessarily implies that the person who makes it not only experienced withdrawal symptoms, but also understood them and learned the addict's word for the process of becoming addicted. On the other hand, an individual who had been "hooked without knowing it" would not be apt to comprehend the question and, if he did comprehend it, would answer in the negative.

Anyone who has ever been hooked is regarded as one of the in-group by other addicts. Regardless of whether he is using opiates at the moment or not, he is spoken of and thought of as "one of the boys," as a "junkie" or as an "ex-junkie,"--never as a "square john" or non-addict. It is not necessary to explain things to one who has been hooked, or to apologize for or conceal anything, for the addict who is not using drugs temporarily is a familiar figure to other addicts and is regarded with tolerance and usually encouraged in his efforts to remain away from the drug. He is not viewed as an outsider, for other addicts remember only too well their own fruitless efforts to quit and remain free, and fully appreciate the experiences of the ex-addict who associates with persons who use the drug. Consequently, they wish the man who has quit good luck,--"I hope you make it; I can't."¹ There is not the barrier to understanding between the addict who is using and the one who is not using, that there is between the addict and the non-addict.

¹There may be isolated exceptions to this rule but from our experience the oft reiterated statement that addicts attempt to seduce non-users, either ex-addicts or non-addicts, into the habit is a gross error. It is not necessary to seduce most addicts to relapse--they relapse of their own accord! The ordinary addict permits the non-using addict to do what he wants to do, knowing full well that he usually wants to resume the drug, and that if he has decided to do so nothing will stop him.

We found that, in order to inquire of drug users whether they had ever known or heard of anyone who had experienced withdrawal and used the drug to avoid these symptoms without becoming addicted, we were forced to ask a question which was self-contradictory in character. Thus, in the language of the addict, we were compelled to ask, "Have you ever heard of a person who got hooked without becoming a junker?" or "Did you ever hear of a junker who was never hooked?" Both of these questions are without meaning to addicts. When we attempted to ask them we were compelled to elaborate and explain what the problem was that we were trying to get at. To the drug user, "hooked" and "addicted" are entirely synonymous. Every "junker" (addict) has been hooked and everyone who has been "hooked" is ipso facto a "junker" or "ex-junker." To this rule the addict's jargon admits no exceptions.

The term "yen" has a popular meaning which is roughly synonymous with "desire," as for example in the sentence, "I have a yen for a piece of pie." With reference to drug addiction, as it is used by the addicts themselves, this word has another separate specialized meaning. It is used to signify the desire for narcotics that is incident to the distress of withdrawal. In this meaning of the term, which is the way it is practically always used by addicts, the drug user who is full of narcotics cannot feel a "yen," nor does he feel a "yen" after he has been in prison for a few months and withdrawal symptoms have vanished subsequent to the removal of the drug. The residual desire for narcotics that persists after abstinence symptoms proper have vanished is not spoken of as a "yen" by addicts.¹ Moreover, it will be noted that the term "yen" is also at the same time actually applied to the withdrawal symptoms as such, regardless of whether they are understood by the individual experiencing them or not. Thus we notice in case no. 10 (chap. iv) that Mr. O who was yawning and "feeling rotten" as he said, was asked if he had a "yen." This question was evidently asked, not because Mr. O had expressed any verbal desire for narcotics, but because he yawned constantly and showed the other physical symptoms of opiate withdrawal. This identification of withdrawal symptoms and the desire for narcotics is further brought out in the warning that is frequently given those who experiment with the drug, "You'll put too many shots

¹Compare chap. vi (of the complete dissertation).

too close together some time and wake up some morning with a yen." In other words, the "yen" for narcotics, or the "desire," which we have seen is the basic psychological aspect of addiction, is so inextricably bound up with withdrawal distress that the two are actually confused with each other and designated by the same term. We once jokingly remarked to a drug user that we were talking so much about drug addiction, withdrawal symptoms, etc. that we were beginning to wonder if we might not develop a "yen" just by doing that. His reply was that that was something that "can't be done by proxy."

As further evidence along these lines we may mention the fact that when a drug user states that he "feels his habit" he means that the distress of withdrawal is approaching or is felt.¹ The addict who has all of the drug he wants does not "feel his habit" nor experience a "yen." Another significant usage is that which distinguishes between the "pleasure user" or "joy-popper" and the addict. A "joy-popper" is simply an individual who uses the drug intermittently and who has never been hooked.² While it is no doubt true that most of these so called "pleasure users" eventually become addicted, as long as they have remained sufficiently cautious so that withdrawal symptoms do not force them to go on using the drug steadily for a time, they are sharply distinguished from those who have been hooked, and they themselves do not regard themselves as addicts. An individual who smokes opium once a week, let us say, and has never smoked more frequently than that, would be called a "pleasure smoker," or it might be said that he had a "week-end," or an "ice-cream habit." This point again indicates how the drug addict's conception of the opiate habit differs from his conception of habit in general. The use of the term "ice-cream habit" in particular, emphasizes the addict's recognition of the essential and radical difference between addiction, in its limited sense as applied to the steady use of opiate derivative drugs, and "habits" in the common sense understanding of that word.³

One may summarize the addict's attitudes toward addiction by saying that he believes that once "hooked" a man "stays hooked," or in the words of a current proverb among them, "Once a junker,

¹Compare D. W. Maurer, op. cit.

²Ibid.

³Ibid.

always a junker." A drug user elaborated on this idea to us in the following terms; "Any man who has ever been hooked that says he doesn't want to use morphin again is either a damn fool or a liar." This same man added that no one would use the drug long enough to become addicted if he fully appreciated the character of withdrawal symptoms; "He would have to be crazy to do that," he said.

It is a common observation that withdrawal symptoms vary in intensity from individual to individual, and this suggests the possibility of there being persons who might be able to use the drug with impunity; that is, without suffering distress of any significant kind when it was stopped. It is well known that certain persons have physiological eccentricities to opiates which cause the drug to have other than the usual pleasant effects during the initial period of use. In these cases the continued use of the drug does not ordinarily appear to cause tolerance at all but simply to produce a progressively aggravated distress if the drug is persistently used. Such persons obviously cannot become addicted. Are there persons who obtain the usual pleasurable effects from opiates in whom this drug does not produce withdrawal symptoms?

In reference to the above question we were surprised to be told by an unusually reliable informant (an addict) of a person who was very well known to him who was apparently, in some degree at least, immune to the withdrawal symptoms. We have not read any other account of such a case, and therefore present this one in spite of its being obtained by hearsay alone. It is presented, not so much for its authenticity, but because of the fact that it appears to be an illustration of what the opiate habit would logically be like if there were no withdrawal symptoms. The story of the case in point as it was related to us is as follows:

Case No. 12.--Mr. Y was accustomed to drinking liquor to excess at times and he also at times used morphin when he associated with a number of drug addicts who were friends of his in a small southern Illinois town. Our informant was one of these addicted friends of his,--a professional thief by profession. According to him Mr. Y used morphin regularly for as long as two weeks, he is certain, and probably more. At the end of this time and in fact whenever he used it, he stopped it abruptly, gave away whatever morphin he had left and went about his business. The addicts associated with Mr. Y were dumfounded at his casual attitude toward the drug and at his failure to get hooked. Mr. Y himself was surprised and several times discussed the situation with his friends. He noticed nothing whatever when he stopped using the drug

except a slight pain in his back for a few hours or a half-day. He had no inclination whatever to use the drug steadily and felt no craving for it. In fact, he considered the addicts as astounding in their behavior as they did him. Their constant conniving and sacrifices to keep themselves supplied with the drug were absolutely unintelligible to him and he told them so. In his entire association with these men he never succeeded in acquiring an understanding of them nor did he become addicted. One occasion particularly impressed our informant. The whole group set out to attend the funeral of a mutual friend who had died from an overdose of morphin, and on the way they stopped their automobile in front of the public library to give themselves injections of morphin in the library wash rooms,--a favorite spot because it was quiet. Mr. Y was astounded and remarked upon the utter absurdity of the fact that a group of apparently sane individuals attending the funeral of a person who had died from the effects of morphin should find it necessary to take some of this poison themselves before going to the funeral!

As there was no way for us to get in touch with Mr. Y, we were unable to talk with him. We questioned our informant closely as to all of the details mentioned and how he knew, and inasmuch as we are not able to think of a possible motive for romancing in this manner we give the story for whatever it may be worth.

It may appear on first glance that those cases of addiction in which the first injection made a tremendous impression upon the individual and caused him to at once begin to use the drug continuously, might be said to be exceptions to the theory in that they perhaps become addicted before there are any withdrawal symptoms. One highly intelligent addict whom we asked what his explanation of the drug habit was, cited his own case to support his contention that the very first injection was decisive. He then gave an account of his initial use of the drug:

Case No. 13.--Mr. F, was wounded in the World War and during his convalescence in an English hospital was employed to take care of part of the hospital's business. He was practically recovered from his wound he thought and did not expect the work to be severe. He was wrong, and found that he was compelled to work fifteen or sixteen hours a day. He became very exhausted and to overcome his chronic fatigue, he in company with other members of the staff, drank whiskey in small quantities for some time. As he said, "For months I wasn't either entirely sober or entirely drunk." The drug supplies of the hospital were under his care, so one day he determined to try a little heroin to see if it would help him overcome his fatigue. He sniffed a little of it, and the effects were marvelous. He found that it "put him on his feet" and not only made him capable of working long hours but actually made it possible for him to enjoy himself afterward by going to a show or some other form of entertainment. He went on using the drug, a little bit every day, for a couple months.

He stopped at about this point in his story feeling that he had made his point concerning the crucial importance of the first experience. We then asked him to go on with his story and tell how he found out that he was hooked, and he continued:

After a couple months of regular use of the drug he went away for a short vacation or week-end visit with a girl. He did not take any opiates along nor did it occur to him that there was any need to. He simply took the train to the city where he was to make his visit and forgot about his heroin. Gradually he became more and more affected by withdrawal distress. At first he did not know what was the matter but he realized before long what it was and the symptoms became so severe that he at once took the train back to the city in which he worked where he replenished his supply of heroin. It was then that he realized, though in an incomplete way, that he was caught, "hooked." After about six months of use he returned by boat to America. He determined that he would quit his habit, so on the boat he threw away all his supplies and quit. Persons on the ship attributed his illness to seasickness. He believed that he would be able to remain free but relapsed after about six months, stating that he then realized that "this thing was stronger than I was."

In spite of the man's own theories in the matter we note very clearly in this case, as in others, that whatever the initial motives for using the drug may be, it is continued, not because of these motives but for reasons associated with the very use of the drug itself and in no way connected with the original motives. The fact that this man left his source of supply without providing for his future demonstrates that his attitude toward the drug did not at that time qualify him as an addict. What really impressed addiction upon him was his experience with the acute withdrawal distress when he made his visit. It should be noticed that prior to this visit withdrawal symptoms were not noticed, though they must have been present and recurring as the effects of each injection wore off. Evidently during these first four months the withdrawal symptoms were an unconscious or unrecognized factor which made for the continuance of the drug, though Mr. F himself thought that he was using it solely to avoid fatigue and to increase efficiency. After his experience with withdrawal, these symptoms entered as conscious factors into the determination of his conduct and into his plans for the future.

This case appears to be representative of cases of this type in which the initial trial of the drug was found to be so exceedingly pleasurable that its continuance for a sufficient period to insure addiction was at once assured. One may, in cases of this kind, speak of a habit of using the drug and a desire for

it preceding actual addiction. Both this desire and this habit are, however, hardly to be compared with the "desire" or the "habit" involved in genuine addiction.¹ It is rather comparable to the case of a man with a terrific headache who "desires" an aspirin tablet if he knows it will relieve him. When the headache is gone and if it does not return, the fact that the aspirin tablets were useful and "desired" will not ordinarily cause them to be taken constantly or regarded as a necessity when there is no headache to use them on. Similarly, Mr. F would no doubt have discontinued his opiates without any hesitation if, when he had attempted to do so, he had found that he no longer noticed the extreme fatigue, and if there had been no distress caused by the opiate itself. Since this time he has learned to desire the drug for its own sake and has used it whether he was fatigued or not. Jöel and Fränkel, discussing these cases, in which there is what they call a primary or pre-existing desire, so to speak, for some sort of euphoric drug, make the following significant remark:

Das Besondere und Komplizierende dieser zweiten Tatsache ist, dass die chronischen Morphinvergiftung mit der allmählichen Erhöhung der Toleranz und dem Eintritt der Abstinenzerscheinungen bei Morphinmangel zu einem Hunger nach Morphin führt der mit dem primären Verlangen nach euphorischen Giften nicht das mindeste zu tun hat. . . . Es gelingt aus jedem Menschen--gleichgültig welcher Konstitution--einen Morphinbedürftigen zu machen.²

L. Kolb also remarked that:

The original impulse [toward narcotics] may have subsided long ago, but this new craving grows stronger and is more difficult to throw off the longer the drug is used. Normal people, who never had an intoxication or narcotic impulse, are as much subject to it as the inebriate.³

In another article this author states: "It thus happens that the drug taken in the beginning because of its power to raise an inferior individual above his normal level, must be taken in the end to keep him from sinking below it and to relieve conditions that the drug itself has produced."⁴

¹The reasons for this statement have been elaborated in chap. iii (of the complete dissertation).

²E. Jöel and F. Fränkel, "Zur Verhütung und Behandlung der Giftsüchten," Klinische Wochenschrift, IV (1925), 1716.

³L. Kolb, "Types and Characteristics of Drug Addicts," Mental Hygiene, IX (1925), 307.

⁴L. Kolb, "Pleasure and Deterioration from Narcotic Addiction," Mental Hygiene, IX (1925), 700.

A consideration of cases of experimentation upon themselves by scientists with advance theoretical knowledge of the habit, presents interesting problems. If one assumes, for example, that a thorough-going acquaintanceship with this phenomenon confers the ability to control the phenomenon upon the person possessing the knowledge, it should follow that opiates could be regularly used for relatively long periods of time by intelligent men, of the medical profession let us say, without resulting in addiction. It will be recalled that L. Faucher, who would be classed in this category, only used the drug once a day for six days, and he himself states that it was the fact that he knew what to expect which caused him to take precautions to see to it that he did not go on using it after the six days. What would have happened if he had made his experiment one of six weeks duration instead of only six days? Faucher's opinion seems to have been that further use of the drug for even a very short time would have been fatal. He remarks, "La prudence extrême que nous avons mise à jouer ce jeu dangereux, nous a préservé du piège funeste." How account for the difference between this case and that of the patient mentioned by Dansauer and Rieth, who received opiates steadily for six years without showing any desire for the drug?¹

The implications of the theory advanced with respect to these cases is quite clear. The deliberate self-experimenter who knows relatively well what to expect will notice and understand the withdrawal distress sooner and more certainly than a layman who is ignorant of the entire subject, and is therefore more susceptible to addiction in this respect. Morphin addiction would therefore seem to be a case in which knowledge is a dangerous thing, in the sense that, if the drug is administered regularly to a person, this very knowledge would cause susceptibility to addiction rather than immunity to it.

In the light of this interpretation we should therefore expect that cases of habituation to the drug which did not lead to addiction would be relatively more numerous among persons outside of the medical profession than they are among medical persons. We have already seen from the data collected by K. Pohlisch in regard to the average use of opiates by prescriptions in Germany that this is precisely the case with regard to the medical profes-

¹Dansauer and Rieth, "Ueber Morphinismus bei Kriegsbeschädigten," Schriftenreihe zur Reichsarbeitsblatt, Arbeit und Gesundheit (Berlin: Martineck, 1931), p. 96, case No. 588.

sion in Germany, where addiction (defined by Pohlisch as the use of more than 1.5 grains of morphin or its equivalent per day for at least six months) was found to be more than 100 times more frequent in the medical profession than in the general population, and where the percentage of doctors who were regarded as habituated but not addicted was only 6.6 per cent of the total number of medical men included, in comparison to a percentage of 48.9 per cent of the cases not belonging to the medical profession. Pohlisch's distinction between addiction and habituation solely on the basis of the size of the dosage is of course arbitrary and subject to error, but as has been indicated, Pohlisch deliberately selected 1.5 grains as the dividing line because he felt certain that by so doing he was erring by including too many rather than too few as addicts and compensating for other inevitable errors of omission--his purpose being to estimate the total number of drug addicts in Germany.¹

There are cases recorded of many persons who experimented upon themselves by smoking opium once or twice or by taking a few injections of morphin. During part of the nineteenth century when the drug habit was not as well understood or its dangers appreciated as fully as they now are, such experiments were no doubt more common than they are now. Nevertheless we have been unable to find even a single instance in which such an experiment, conducted by an individual upon himself, was carried out beyond the couple weeks that are usually admitted to be necessary before withdrawal symptoms become significant without ending in the addiction of the experimenter. This fact appears all the more significant in view of the frequency with which accounts may be found by supposedly "cured" addicts, and in view of the interest that the problem of a cure of drug addiction has attracted. One would suppose that if someone had demonstrated his immunity to the habit-forming tendencies of the drug, this discovery would have been widely heralded and advertised, and perhaps taken as evidence that persons with "strong will-power" or with certain types of characters could not become addicts even though they used morphin or heroin regularly for a time. Apparently experiments of this kind have uniformly ended in grief, for it is not difficult to find

¹K. Pohlisch, "Die Verbreitung des Chronischen Opiatsmissbrauch in Deutschland," Monatschrift für Psychiatrie und Neurologie, LXXIX (1931), 1-32.

addicts who began for reasons such as these; that is, out of "curiosity" or a desire to experiment, whereas accounts of individuals who have experimented with the withdrawal symptoms and escaped addiction are conspicuously absent in the literature.

William Willcox tells of a man who believed that regular use of heroin or morphin would not be dangerous to him. He states:

This patient, who is a man of very strong will and brilliant attainments, took morphin some years ago in order to relieve the pain of sciatic neuralgia. He said, "I have a strong will, and there is no risk in my taking morphin, though others should not do so." He has been an addict for fifteen years.¹

In another article Willcox states:

It has been said with truth, I think--that the administration of morphin or heroin hypodermically daily for a month is likely to give rise to addiction in a person of normal temperament. We know people who say: "I am a man, and one having a strong will. Morphin or heroin will not affect me; I can take it as long as I like without becoming an addict." I have known people--sometimes medical men--who have made that boast, and without exception they have come to grief.²

Dr. J. B. Mattison, in an article on "Morphinism in Medical Men,"³ cites a number of instances of persons who became addicted by too frequent experimentation on themselves, and discussing the causes of the frequency of addiction among medical men makes the following assertions:

Still another genetic factor, and in my opinion the one which outranks all others relative to the frequency of this disease in medical men, is their ignorance or unbelief as to the subtle, seductive, snareful power of morphia. . . . He states that doctors do not usually use the drug for pleasure but "rather that they are impelled thereto by force of physical conditions that, with the largely prevailing failure to realize the risk incident to incautious morphia using, are practically beyond control." . . . The subtly ensnaring power of morphia is simply incredible to one who has not had personal observation or experience. . . . I make bold to say that the man does not live who, under certain conditions, can bear up against it.

His final conclusion and advice to the doctor is as follows:

Let him not be blinded by an under-estimate of the poppy's power to ensnare. Let him not be deluded by an over-confidence in his own strength to resist; for along this line history has repeated itself with sorrowful frequency, and--

¹Wm. H. Willcox, "The Prevention and Arrest of Drug Addiction," British Journal of Inebriety, XXIV (1926), 4-5.

²Wm. H. Willcox, "Medico-Legal Aspects of Alcohol and Drug Addiction," British Journal of Inebriety, XXXI (1933), 132.

³Journal of American Medical Association, XXIII (1894), 187.

as my experience will well attest--on these two treacherous rocks hundreds of promising lives have gone awreck.¹

Thus, though the theory which makes the withdrawal symptoms the central and decisive factor in producing addiction as it has been outlined, is subject to experimental disproof by the simple expedient of experimentation on oneself if one does not believe it, no such negative evidence is to be found after close to a century of scientific interest, study, and experimentation. Those who have been bold or foolhardy enough to try this sort of experimentation have either stopped in time, as Faucher did, or have gone on and joined the ranks of the addicts. We have no doubt that new cases of addiction are being made in this manner today for in the course of our study we have several times been told with perfect assurance by non-addicts that they were sure that they would never become addicts even though they were to receive morphin or heroin regularly for a long time.² This belief is, in our opinion, one of the most important factors facilitating the spread of drug addiction, as Mattison asserted it was in 1894 among the members of the medical profession.

Alexander Lambert, an outstanding authority on addiction with an immense background of experience with addicts, makes this assertion:

Morphin given daily for three weeks or longer, in small doses, almost invariably produces that peculiar narcotic necessity which we designate as the narcotic habit. Some patients may resist longer than others; but the average power of resistance is slight.³

¹Ibid., p. 188. Writers on drug addiction who experimented upon themselves through motives of "scientific curiosity" are, L. Faucher, Contribution à l'étude du rêve morphinique et de la morphinomanie, Thèse de Montpellier, 1910-11; Queré, Contribution à l'étude comparée de l'opium et de l'alcool au point de vue physiologique et thérapeutique, Thèse de Bordeaux, 1883; H. Libermann as described in R. Dupouy, Les opiomanes (Paris: F. Alcan, 1912), p. 83; and others, as for example many English writers who defended the use and sale of opium in India, see British 1895 Report by Royal Commission, The Opium Habit in the East. Other authors who have commented upon the fatal results of experimentation in this field and have cited cases, particularly of medical men, are D. Jouet, L'étude sur le morphinisme chronique, Thèse de Paris, 1883, and A. Calkins, The Opium Appetite (Philadelphia: Lippincott, 1871). "Curiosity" and "experimentation" are often cited as "causes" of addiction.

²We have already pointed out that this belief characterizes practically all addicts before they become addicted.

³Quoted by Terry and Pellens, op. cit., p. 149.

Charles E. Sceleth, another well-known student of this subject, stated that three weeks of regular use of opiates can form the habit in anyone, no matter how strong his will, and three months will make it impossible for him to break his habit alone.¹ C. C. Wholey likewise states:

Unlike the poet, the morphinist may be made, not born such; there need be neither special neuropathologic constitution, nor hereditary taint. . . . The average individual can take alcohol in ordinary doses for long periods and still retain his independence; no individual can do this with morphin. It is not a rare occurrence for some alcoholic of some length of habit to take a brace and the pledge, and remain sober ever after. But after a corresponding period with morphin,--a period much less in point of duration,--it is almost unheard of that an habitue is able voluntarily to break away from his habit.²

Other statements like these are common in the literature.³ It will be seen at once that they conflict directly with what is also perfectly well known to students of drug addiction; namely, that many persons who receive narcotics regularly and in relatively large amounts for long periods of time do not become addicts. These statements seem to imply that addiction is simply the invariable and necessary consequence of the development of tolerance, but the assumption is evidently implicit in them that this tolerance and physiological dependence is accompanied by awareness of this dependence, for otherwise they would be contradicted by an immense body of evidence which proves beyond question that the development of a tolerance for morphin in therapeutic practice is in fact rarely followed by addiction.⁴ If it may be safely assumed

¹A. Lambert, "A Rational Treatment of the Morphin Habit," JAMA, LXVI (1916), 862.

²C. C. Wholey, "Morphinism in Some of Its Less Commonly Noted Aspects," JAMA, LVIII (1912), 1855.

³F. J. Masters, for example, states that 15 days of opium smoking makes a habit ("The Opium Traffic in California," The Chautauquan, XV [1896], 56). As a rule the time required is said to be above this figure.

⁴See chap iii (of the complete dissertation). See also the review of the literature on this point in Terry and Pellens, op. cit., chap. iii. It will be noticed that whereas during the nineteenth century authorities were in the main agreed as to the primary importance of medical practice in producing drug addicts, the situation in recent years has been radically changed and there is now equally unanimous agreement that only a very small percentage of new addicts now being created in this country owe their addiction to medical practice. See for example the writing of W. M. Treadway and Lawrence Kolb. Addicts themselves consider it a joke if another addict claims to have become addicted through medication.

that statements such as those quoted assume that the three weeks or three months of regular use of morphin which is said to result inevitably in addiction, is accompanied by an awareness on the part of the person involved that he is dependent upon the drug, then they are clearly in accord with the theory that has been advanced.

This brings us to an interesting problem; namely, that of considering the problem of habituation to opiates during the nineteenth century and in the first decades of the twentieth when opiate-containing patent medicine preparations abounded on the open market. We may mention, for example, such classic old remedies as Laudanum, McMunn's Elixir of Opium, Godfrey's Cordial, Mother Bailey's Quieting Syrup, Winslow's Soothing Syrup, Black Drop, and a host of others. These preparations were widely used all over the country and sold in vast quantities. Add to this, the further fact that doctors in those days were very liberal in their use of opiates and first believed, when the hypodermic needle came into practice, that morphin used in this manner was not "habit forming."¹ When heroin was first introduced near the beginning of the twentieth century it was widely hailed as a non-habit forming substitute for morphin--exactly as nearly a hundred years before, morphin had been hailed as a substance possessing all the virtues of opium and none of its disadvantages.² With opiates so common and well advertised there must have been a great deal of innocent use of it in patent medicines by persons who had no notion of addiction and no suspicion that they were "opium eaters"--who were habituated in other words, but not addicted.

¹See Terry and Pellens, op. cit., p. 66.

²Ibid., chap. 11. The following advertisement carried by the Medical Record for McMunn's Elixir of Opium illustrated how opiate preparations were advertised to the public: "It contains all the valuable medicinal properties of Opium in natural combination to the exclusion of all its noxious, deleterious, useless principles upon which its bad effects depend. It possesses all the sedative, anodyne, and antispasmodic powers of Opium: To produce sleep and composure; to relieve pain and irritation, nervous excitement, and morbid irritability of body and mind; to allay convulsive and spasmodic actions, etc.; and being purified from all noxious and deleterious elements, its operation is attended by no sickness of the stomach, no vomiting, no costiveness, no headache nor any derangement of the constitution or general health. Hence its high superiority over Laudanum, Black Drop, Denarcotized Laudanum and other opiate preparations."

That most opiate addicts were created by patent medicines and by medical practice during the nineteenth and well into the twentieth century can scarcely be doubted. Terry and Pellens in their review of the early literature in this country reveal that prior to 1900 there was practically universal agreement among American authorities that the chief ways in which addicts were created were through careless medical practice and by self-medication. V. G. Eaton (in 1888) examined 10,000 prescriptions from Boston drug stores and found that 1,481 contained opiates. Of all the prescriptions that were renewed once, 23 per cent contained opiates, of those that were renewed twice, 61 per cent contained opiates, while those that were renewed three times contained opiates in 78 per cent of the cases. He then raises the question as to what percentage of those who began by consuming opiate-containing medicines, went on to become addicts. He states:

It is hard to learn just what proportion of those who began by taking medicine containing opiates became addicted to the habit. I should say, from what I learned, that the number was fully 25 per cent--perhaps more. . . . When a person once becomes an opium slave, the habit usually holds for life.¹

The question in which we are interested is the reasons for the change from opiate-containing medicines to morphin, or more exactly, in the processes of transition from innocent habituation to confirmed self-conscious addiction. According to the viewpoint taken here, this transition should occur when the person who had become physiologically dependent upon the drug was told or realized the nature and significance of this dependence; that is, that it was caused by withdrawal symptoms produced by the drug itself.

Fortunately, Eaton himself gives an excellent illustration of how the transition takes place in an account of an old lady who took opiate containing "cough balsam" to "quiet her nerves."

One apothecary told me of an old lady who formerly came to him as often as four times a week and purchased a 50 cent bottle of "cough balsam." . . . He told her one day that he had sold out of the medicine required, and suggested a substitute which was a preparation containing about the same amount of morphin. On trial, the woman found the new mixture answered every purpose of the old. The druggist then told her she had acquired the morphin-habit, and from that time on she was a constant morphin-user.²

¹V. G. Eaton, "How the Opium Habit is Acquired," Popular Science Monthly, XXXIII (1888), 666.

²Ibid., pp. 665-6.

Another writer, in 1881, described the way in which the opium habit was established as follows:

The careless manner in which physicians prescribe opiates, and the prevailing custom among druggists of duplicating prescriptions, are prolific sources of the evil. The physician prescribed morphia for a patient suffering from some painful disease, and relief is obtained. Moreover, the sensations experienced under the influence of the medicine are peculiarly pleasurable. He goes back to the drug store and has the medicine renewed without the physician's advice or direction. He finally learns that it is morphia he has been taking, purchases a quantity, and finds that by its use he can relieve his pain or waft himself into Elysium at pleasure. Finally he ascertains that his health is being injured, or is otherwise warned of the danger, and attempts to give up its use. Suddenly his eyes are opened to his folly and he realizes the startling fact that he is in the toils of a serpent as merciless as the boa-constrictor and as relentless as fate. With a firm determination to free himself he discontinues its use.

Now his sufferings begin and steadily increase until they become unbearable. The tortures of Dives are his; but unlike the miser, he has only to stretch forth his hand to find oceans with which to satisfy his thirst. That human nature is not often equal to so extraordinary a self-denial affords little cause for astonishment. At length he surrenders, but with bad grace, determined to renew the contest at no distant day under more favorable circumstances; returns to the drug and is again happy--happier than ever in contrast with the misery lately endured--but far from satisfied. He realizes that he is being enslaved and sullenly resolves that it shall not be. Little he reckons that he is enslaved already, or that his late submission has shortened his chain a link. He waits for the favorable opportunity, meantime increasing the quantity imperceptibly but steadily, and, when the effort is repeated, finds himself more firmly bound than before. Again and again he essays release from a bondage so humiliating, but meets with failure only, and at last submits to his fate--a confirmed opium-eater. The effort made and the misery endured are finally submitting can never be realized by the self-righteous man who arrogantly inquires: Why doesn't he stop it? Is it strange that opium-eating is styled by the people of the East the "Sorcery of Majoon" or that superstition attributed the power of the poppy to the influence of an evil spirit?¹

We notice from these accounts of how the opium habit was contracted more than half a century ago that, though the habits described were oral rather than hypodermic and though the manner of becoming exposed to the habit was different, the same essential steps and processes were involved.² We notice the startled surprise of the

¹"The Opium Habit," Catholic World, XXXIII (September, 1881), 829-30.

²In addition to being applicable to drug addiction in our own culture at a different time than the present, our theory also appears to be applicable to addiction in widely dissimilar cultures

beginner when he first experiences the withdrawal distress and realizes its significance, we see how the vain struggle against the withdrawal symptoms fixes the habit and the desire for the drug. The theory that the drug habit begins with and is caused by the perception of the significance of the withdrawal symptoms and the use of the drug thereafter to avoid them offers us a simple and consistent means of explaining that some of those who used patent medicines containing opiates became addicts while others did not. It likewise enables us to understand that when the Harrison Act and other restrictive laws went into effect and eliminated opiate drugs from the legitimate open market, many of the persons who were accustomed to the use of such drugs as Laudanum, McMunn's, etc. no doubt discontinued their use, experienced varying degrees of discomfort, and were none the wiser. On the other hand, it is equally certain that others who had the misfortune to be enlightened as to the nature of their ailment--like the old lady who took "cough balsam" to quiet her nerves--went on using the drug.¹

of the present day. From the writings of R. N. Chopra it appears that drug addicts in India exhibit the same essential characteristics as American addicts; that is, they feel a desire for the drug, it makes them feel "normal," when deprived of it they suffer intensely for a time from withdrawal and tend to relapse to it in the great majority of cases, etc. Chopra in "The Opium Habit in India," Indian Journal of Medical Research, Vol. XV, tells of a "curious" case of addiction in which a person drank opiate-containing tea with a friend for a period of time. When the friend left this person became miserable even though he continued to drink tea. Chopra does not say how he discovered that his tea had contained opiates, but he evidently did for he became addicted. This indicates that the role of withdrawal symptoms in India in causing addiction is probably the same as in the United States. Indeed there is no evidence that we know of which would offer any basis for believing that addiction is not the same the world over with respect to the manner of becoming addicted as we have sketched it, and with respect to the essential criteria of addiction described in chapter iii. The work of Chopra and his associates on opium addiction will be found in the Indian Journal of Medical Research, Vols. XV, XVI, and XX, and in Indian Medical Gazette, Vols. LXVI, LXVIII, LXIX, and LXX. There is no suggestion in League of Nations' publications that opiate addiction in some countries is essentially different from what it is in others.

¹The significance of the knowledge of the name of the drug being given is brought out by the British Medical Journal, June 4, 1932, commenting editorially upon the 25th annual report of branches of the Norwood Sanitarium Ltd. which handled 580 drug cases. It is stated, "In some instances the patient had only learned the nature of the drug used by seeing the label on an empty tube left at the house by the doctor."

There can be little question that physicians and druggists were to a great extent responsible for opiate addiction during most of the nineteenth century in the sense that it was they who made the drug available to many people and that it was they to whom the drug user was frequently indebted for his knowledge of the fact that it was morphin or opiate drugs that he was receiving, or had been receiving. Since that time a considerable change has taken place and it is now agreed that medical practice is responsible for only an exceedingly small percentage of the addicts being created today. What are the reasons for this change and why does not the administration of opiates in medical practice today lead to addiction as often as it did?

The British Departmental Report¹ of 1926 furnishes a clue to the answer to this question when it makes the point that though psychoneurotic persons may experience greater initial pleasure from opiates than more normal persons do, they may nevertheless be prevented from becoming addicts if the proper precautions are taken in the administration of the drug. The report emphasizes that if these precautions are not taken anyone may be made an addict. Two of the precautions that are recommended are: first, that the patient be kept in absolute ignorance of what he is given; and second, that the use of the hypodermic needle be avoided. Both of these precautions have been emphasized for a long time. It was soon appreciated that a patient who was ignorant of or had been deceived as to what he was taking would have difficulty in becoming an addict even though he wished to. A physician stated in 1896:

The danger of physicians creating morphin fiends, it need hardly be said, is greatly over-estimated. Intelligently used there is little danger of such results. With our highly neurotic temperaments we must, however, exercise more than usual tact, so as not to be deceived into its unnecessary use. It is the general and erroneous impression of the laity that all hypodermatic injections are necessarily composed solely of morphia--it is the only drug that they can associate them with. When one has a patient wherein the protracted and regular hypodermic use of morphia may be required for a length of time, it would be well if an occasional hypodermic of strychnia were given, with particular care that some of the family, or the patient, should pick up that vial and read the label. . . . It is a mistake to tell a patient that you are using morphia. . . . Diminish the dose, or substitute something else with the dosage as you gradually diminish the morphia. Do not

¹Report of the Departmental Committee on Morphin and Heroin Addiction to the Ministry of Health, 1926.

make a consultant of your patient in these matters.¹

Dr. P. Wolff, an eminent German physician and student of addiction, states:

In my opinion a further great advance would be made if injections of morphin, etc., were replaced as far as possible by the use of suppositories. Not only do these produce the same qualitative and quantitative effects, but also the patient is not immediately aware that he has received morphin. In many cases where medical treatment is the origin of addiction, numerous mental associations would be avoided in the absence of the symbol of the syringe.²

It can readily be seen that the "mental associations" referred to have to do with the patient's previous knowledge or stereotypes concerning drug addiction, and that what happens when these associations are made is that he becomes attentive to and expects certain effects that he might otherwise pay no attention to. He is then in a better position to understand the reasons for whatever distress he may experience when the drug is removed.

These two devices--the avoidance of the syringe and keeping the patient in ignorance--as well as other precautions that are sometimes taken, such as mixing the opiate with another less pleasant drug, the change in methods of administration, the use of sterile hypodermics, disguising the opiate in medicine, misinforming the patient, and the gradual reduction of the dosage when it is desired to remove the drug--all these techniques serve the same end in that they prevent the patient from gaining a clear conception of the significance of the sensations he notices, prevent him from tying up what he knows or thinks he knows about drug addiction with his own experiences, and so prevent addiction. When a patient has been thoroughly deceived by the skillful application of these devices and suffers withdrawal symptoms as the drug is removed he cannot in the nature of the case realize what is the matter with him, and if there has been disease, it is all the more simple and inevitable that he attribute these symptoms to it rather than to the "dope," of which he has been unaware. When he has fully recovered he is then as much in the dark as before about the mysterious habit-forming propensities of certain drugs.

If it were possible to hazard human materials in an

¹P. C. Remondino, "The Hypodermic Syringe and Our Morphin Habitués," Medical Sentinel, IV (1896), 5.

²P. Wolff, "Alcohol and Drug Addiction in Germany," British Journal of Inebriety, XXX (1932), 164.

experimental test of the viewpoint presented, one way of going about it would be to give a group of individuals opiates regularly for a period of time keeping them in complete ignorance of what was being done and removing the drug in a gradual manner so as to keep withdrawal distress at a minimum. One might then repeat the administration to the same persons giving them full information as to what was going on, permitting them to use the drug themselves, and when tolerance was established, permitting them to become ill from withdrawal and then demonstrating to them what was wrong by calling their attention to the way in which the drug would at once dissipate all their discomfort. According to the implications of the theory, persons who failed to become addicted in the first experiment who did become addicted in the second would then be in a position to compare the two experiences and perhaps isolate the differences. Inasmuch as the hereditary factors would be held constant in such an experiment the differences in effects would presumably have to be attributed to situational factors. As we have said, such an experiment cannot of course be performed, but in a sense it has already been performed, for there are cases of individuals who have had two such experiences with the drug, both involving sufficient time to produce tolerance and withdrawal distress, but one of them leading to addiction whereas the other did not. Such cases appear to meet the conditions and requirements for a significant test of the theory advanced. Let us see what the implications of these cases are for our theory.

One such case has already been cited--case No. 3--in which a doctor became habituated to morphin during an illness, had the drug withdrawn, and then went about his business as before until several years later when he used the drug himself in connection with another illness, and became addicted. It is significant that in his experiences with withdrawal symptoms when he became addicted he realized for the first time, in retrospect, that he had experienced these same symptoms years before during his previous illness. Erwin Strauss records the case of a German woman who was given morphin injections twice daily for six months, from February to July of 1907, on account of gall stones. In July she was operated upon and during her convalescence the drug was successfully removed. Nine years later at the age of forty-nine this woman lost her only son who was killed in the Great War and she was prostrated by grief. After weeks of grief and some thought

of suicide, this woman happened to recall that nine years before she had been beneficially affected by morphin so she purchased some in a drug store and began to use it.¹ It helped her and in a short time she became addicted. When she was asked by the physician if she had experienced withdrawal symptoms in 1907 when the drug had been removed she replied that she did not recall any. Dansauer and Rieth give a brief summary of another case of this kind:

In 1914 Brustschuss mit Verletzung des Brustbeines und zweier Rippen, seitdem Interkostalneuralgie. Wurde im Lazarett schon an Morphin gewöhnt, es wurde ihm aber dort wieder unmerklich völlig entzogen. Dann ärztlich wiederverordnet etwa 1922, zeit 1924 selbst gespritzt.²

We ourselves interviewed one other case of this type in addition to case No. 3 already cited, and found another in documents collected by B. Dai.³

Cases of this kind in which a coincidence of this character occurred are naturally not numerous, but those that are available without exception correspond with those already described in that the withdrawal symptoms were not understood in the first experience with morphin, when addiction did not follow, and were either understood in retrospect or could not be recalled at all when addiction was later established. These cases constitute a striking corroboration of the theory and present problems which it is difficult to solve in any other way.

Finally, it may be mentioned that the relatively greater ease with which an opiate habit is said to be established by the use of the hypodermic needle in comparison with other methods, is made readily intelligible by this interpretation of the origin of the habit. The effects of the drug when administered in this manner are more immediate, and the direct contrast between the states of mind and body before and after the injections therefore emphasizes the effects of the drug in relieving withdrawal symptoms and consequently makes the correct interpretation of these symptoms more obvious.

¹E. Straus, "Zur Pathogenese des Chronischen Morphinismus," *Monatschrift für Psychiatrie und Neurologie*, XLVII (1920), 83. The fact that she purchased it herself demonstrates that she was not ignorant of the name of the drug that had been used, and corroborates our contention that though this knowledge is important it is not the crux of the matter.

²*Op. cit.*, p. 103, case No. 115.

³In a study of addiction at the University of Chicago.

CHAPTER VIII

IMPLICATIONS AND CONCLUSIONS

It is the purpose of the present chapter to consider some of the more general implications and conclusions which emerge from the foregoing discussion. Certain general assumptions were stated in the introduction as basic assumptions in the present study, and since one of these assumptions was that the validity of methods is finally determined by the results obtained from using them rather than by logical means, it is appropriate to view the results of the present study in a broader perspective to determine what general theoretic significance may be attached to them. In order to have scientific value a generalization must not only be applicable to the immediate area in which it arises, but it must have implications which extend beyond this area. It must appear as an integral part of some sort of structure of theory and not be a mere isolated generalization without any connections.

The opiate habit has been described as one which depends essentially upon the negative effects of the drug--that is, upon the effects of the removal of the drug rather than upon the effects of the presence of the drug. It was shown that addiction is generated in the process of using the drug to alleviate withdrawal distress after this distress had been perceived and interpreted in a particular manner--that is, as being due to the absence of opiates. Without this interpretation addiction cannot occur and whenever anyone uses the drug in the manner specified, or assumes these attitudes toward the drug's effects, addiction quickly becomes established. The evidence in support of this conclusion, as it has been sketched, so uniformly and completely corroborates this hypothesis that we regard the theory as established, though it may be subject to refinement in the details of its applicability to certain borderline instances.

It was further shown that the specific theory concerning the establishment of the habit also offered the means of explaining the development of those characteristics of opiate addiction which are essential and universal aspects of the habit--namely, the

desire for the drug, the sense of being supported by it, the tendency to relapse, the tendency to increase the dosage, and the definition of self as an addict. The theory advanced is therefore applicable both to the origin and to the nature of the habit.

The beginner's interpretation of his initial experience of withdrawal distress consists essentially of the application to his own conduct of a collective framework of interpretation. The belief that withdrawal symptoms are caused by the absence of the drug is a social belief which has been built up and elaborated gradually in the history of the race. Each individual addict does not rediscover this knowledge for himself but rather has it thrust upon him by his social environment,¹ for it is present in many parts of our culture, as, for example, in the medical field, in popular stereotypes concerning the subject, and in literature.

It should be pointed out that, although this interpretation of withdrawal symptoms may be correct from the common sense viewpoint, it is not satisfactory or adequate from the viewpoint of physiological theory, for the question must be asked as to why the withdrawal of a poison should cause the violent organic disturbance which the withdrawal of opiates does. E. S. Bishop attempted to account for this by means of an hypothesis which assumed that the administration of an opiate created some sort of antidotal toxic substance which acted as a poison except when controlled by the presence of the opiate. When the opiate was withdrawn Bishop assumed that this antibody acted upon the organism in such a manner as to cause withdrawal distress.² Bishop's theory is not accepted today and no other generally accepted theory has been substituted for it. From the viewpoint of this sort of research it

¹We have never encountered an addict who did not have some knowledge or beliefs concerning addiction prior to becoming an addict, though the hypothetical possibility of rediscovering the belief that withdrawal distress is due to the withdrawal of opiates, etc., by trial and error must be admitted, since that was no doubt the manner in which the interpretation was first built up. It must be emphasized, however, that this interpretation as a result of a trial and error processes, or any interpretation, presupposes the existence of a culture which supplies the categories and the language in terms of which the interpretation is made. Neither a feral man nor a chimpanzee could be expected to achieve this interpretation of withdrawal distress, regardless of any experiences they might have with the drug.

²Ch. E. Terry and Mildred Pellens, The Opium Problem (New York: The Committee on Drug Addiction, 1928), p. 372.

is not satisfactory or sufficient to merely assert that withdrawal distress is caused by the withdrawal of a poison, for that in itself explains nothing to the physiologist. Obviously if a theory like Bishop's were found to be true the belief that the withdrawal distress is caused by the withdrawal of the opiate would by the same reasoning and from the same point of view have to be false, inasmuch as some other substance or poison would then intervene between the morphin and the eventual withdrawal distress as the direct cause of these symptoms. If a situation of this type were found to exist, withdrawal symptoms could then be produced by the direct introduction into the system of the hypothetical antibody without any prior use of opiates, and the inadequacy and inaccuracy of the assertion that withdrawal distress is caused by the withdrawal of opiates would be apparent.

The only point which it is desired to emphasize, however, is that the questionable validity of this interpretation of withdrawal distress from the viewpoint of natural science, does not affect the matter of its effectiveness in the addiction process. The belief has certain consequences regardless of its inadequacy from the standpoint of physiological research. We have pointed out that no acceptable physiological theory to explain withdrawal symptoms appears to be available, and from this point of view it would therefore be logical for the user of the drug to suspend his judgment concerning the causes of withdrawal distress. He might also merely conclude that he was afflicted by a certain kind of poisoning which yielded to treatment by means of morphine, but, as we have shown, this sort of interpretation does not lead to addiction. The person who is habituated but not addicted to the drug often does interpret the recurring withdrawal distress in this manner and as long as he does so he escapes addiction (see chap. ii of the complete dissertation).

It is therefore not the validity of the interpretation that is the crucial matter, but the fact that this interpretation exposes the beginner to the system of influences and scheme of behavior implied in such terms and phrases as, "dope fiend," "habit," "addicted," "cure," "Harrison Anti-narcotic Act," "kick," and so on. It is not the mere fact that the drug is used as a cure of the distress of withdrawal which is crucial, but rather that at the same time that the drug is so used the individual makes to himself propositions like the following: "I have a

habit," "I must be a dope fiend," "I wonder if I would do anything to get the drug the way dope fiends are supposed to," "Drug addiction is sometimes said to be incurable; I wonder if that is true," "I wonder if I can quit this thing," and so on. We have repeatedly called attention to the drug addict's inner conversation with himself in this manner, when he applies to his own conduct the symbols which the group and he himself have applied to it in others. This is what G. H. Mead has described as the assumption of the role of the generalized other. He states, for example:

The self arises in conduct, when the individual becomes a social object in experience to himself. This takes place when the individual assumes the attitude or uses the gesture which another individual would use and responds to it himself, or tends so to respond. . . . In the process the child gradually becomes a social being in his own experience, and he acts toward himself in a manner analogous to that in which he acts toward others. Especially he talks to himself as he talks to others and in keeping up this conversation in the inner forum constitutes the field which is called that of mind. Then those objects and experiences which belong to his own body, those images which belong to his own past, become part of himself.¹

In the light of this statement the drug addict's description of his behavior to himself ceases to appear as a mere incidental by-play and becomes the field in which addiction is generated. It is in his use of language symbols in application to his conduct that the withdrawal effects come into interaction with the self, and it is in the individual's response to the implications of these symbols that he assumes the role of the addict as it happens to be defined in a particular culture. It is likewise his response to the implied attitudes of the group toward addiction which are contained in these symbols that gives birth to the drug user's persistent and recurring desire to be free of his habit.² The occurrence of this sort of internalized conversation presupposes, as Mead has pointed out, the existence of selves and a developed

¹G. H. Mead, "A Behavioristic Account of the Significant Symbol," *Journal of Philosophy*, XIX (1922), 160. Cf. also, Mead, *Mind, Self and Society* (Chicago: University of Chicago Press, 1934).

²Judging from League of Nations publications, non-addicts in all cultures disapprove of addicts, though in varying degrees. What information there is available indicates that addicts in these other cultures also have the desire to be cured. R. N. Chopra in his work on addicts in India, for example, tells of those who submitted themselves to him for voluntary cures. Addicts in Germany and England and other European countries appear to take voluntary cures about as frequently as American addicts.

language system--the "significant symbols" which make the described process possible.¹

The process of becoming addicted presupposes a complicated conception of physical causality and the ability of the person involved to observe and analyze his own experiences. He must be able to understand and believe that certain aspects of the way he feels at a given moment can be attributed to and explained by the presence in his body of an exceedingly minute quantity of a drug injected many hours before. The effects of the drug, especially when the organism is adapted to a regular dosage, are often not recognizable in isolation and the person who is under the drug's influence without knowing it often believes that he merely feels "natural." The association between the effects of the drug and the injection of it therefore involves the perception of the relationship of events which are considerably separated in time. It is also necessary in the interpretation of withdrawal that the individual associate this distress with the cessation, several hours before, of the regular use of the drug. This implies a complex, sophisticated conception of pharmacological causation and the association of two events which are again widely separated in time and are also dissimilar in character. Moreover, this sort of interpretation is not in line with the usual procedure of the man on the street, who assumes, when he becomes ill, not that he has stopped taking some poison or other, but rather that some unfamiliar poison has been introduced into his body.

We have already shown that a person who is given the drug without his knowledge does not have the sense of being buoyed up because the effects of the drug in small doses are not sufficiently out of the ordinary for this to be possible. It is evident that in such a case the matter can be explained to the one who receives the drug in ignorance, and he can learn, by virtue of this explanation, to feel buoyed up by the drug. In order for this explanation to have meaning, however, the individual to whom it is presented

¹Cf. for other systematic discussions of the function of language symbols in the mind of the individual, in addition to the works of Mead, M. Halbwachs, Les cadres sociaux de la mémoire (Paris: F. Alcan, 1925); Mrs. Grace Mead de Laguna, Speech, Its Function and Development (London: H. Milford, Oxford University Press, 1927); C. Blondel, La conscience morbide (Paris: F. Alcan, 1928); and E. Cassirer, Philosophie der Symbolischen Formen (3 vols.; Berlin: B. Cassirer, 1923-1929), and the works of Jean Piaget on child psychology.

must be able to appreciate the causal sequence that unites the way he feels at a given moment with the previous injection of the drug. We may thus say that, taking into account the fact that animals, infants, idiots and the insane, as well as normal people, may have the drug administered to them regularly without their knowledge, only those to whom the drug's effects can be explained can become addicts. We have pointed out that in many of our cases the beginning of addiction was marked by the explanation to the beginner, by an addict or by a physician, of the significance of the withdrawal distress being experienced. Whenever anyone experiences the withdrawal distress without understanding the connection between it and the opiate, and does not have it explained to him, he likewise escapes addiction. We may therefore say that the immunity of the insane, of animals, of idiots and of young children is based upon the feature common to all that the withdrawal symptoms cannot be satisfactorily explained to them.

The inexperienced non-addict (and therefore the animal also) does not recognize the long range effects of the first injection of the drug or associate these effects with the injection. We have also pointed out that he does not at first recognize the withdrawal distress in its relation to the prior use of the drug. It is only the occurrence of and the recognition of the withdrawal distress when the drug's effects are wearing off which gives the realization of what the drug's actual effects have been and how long they last. Each of these aspects of the use of the drug at first appears as an isolated occurrence and is responded to as such. When the withdrawal distress, the injection, and the drug's effects have been united in a single conceptual scheme the individual no longer reacts to them as separate events each calling for a specific response adapted only to it, but reacts to them as an integrated whole in which each part implies or symbolizes the other. Normal functioning is transformed into a state of being supported by the drug by virtue of the anticipation of withdrawal distress and the withdrawal symptoms become signals for an injection and are identified with the desire for the drug. The conceptualization of this series of events connected with the use of the drug not only puts the various members of the series into relationship with each other but also puts them into relation with the individual's self and with the culture of the group.

It is evident that the drug addict is enabled to assume

the role of the generalized other with respect to his experience of withdrawal distress by virtue of the fact that prior to becoming an addict he has been a non-addict and a participating member of society. The very use of language symbols, in terms of which the process of re-evaluating the drug and himself goes on, means that the addict must share the social heritage of a complexly organized society in which the study of pharmacology and a concern with the effects of drugs has become traditional. As has been pointed out before, addiction below the age of fifteen is exceedingly rare. This means that prior to becoming addicts, persons have spent most of the formative years of their life in some sort of non-addict society, they have become socialized and assimilated into group life and have absorbed a culture which includes within it attitudes toward the addicts whom they are destined to join.

Drug addiction is, therefore, of necessity a social phenomenon. We have already pointed out as we were defining addiction that an animal or an infant could not be regarded as an addict. The theory we have presented now makes evident why animals and infants cannot become addicts. It is because addiction presupposes life in organized society. The ability to assume the attitude of the generalized other toward one's own subjective experiences is not present in the animal or the child because they lack the ability to manipulate and respond to the complex system of language symbols which is basic to the whole process.

The question may be raised as to when a child is old enough to become an addict. An infant of six months certainly cannot become an addict and a boy of fifteen certainly can. Where, between these two ages, does immunity to addiction end, and why? The answer to a question of this kind is difficult and can be made only on the basis of the study of cases of a borderline character. We have found recorded in the literature only one case which had a crucial bearing on this problem. It was the case of an infant who had been given opiates from birth on account of withdrawal symptoms which occurred during the first few days of extra-uterine life--the mother being addicted during pregnancy. This child had the drug removed gradually when he was twelve years old, and as far as the reports go, did not exhibit the usual tendency to relapse.¹ It is not possible to form any exact conception of the

¹Terry and Pellens, *The Opium Problem*, pp. 426-27, cite the case of a child which was reputed to have received laudanum

special factors involved in this sort of situation because of the meagerness of the account. The research of R. N. Chopra in which he demonstrated that the feeding of opium to infants for the first three years of life was unrelated to addiction during adulthood, strongly suggests that three year old children cannot be regarded as addicts. The case which we have cited suggests that this immunity persists for a number of years beyond the age of three.

It may be asked if cases of the kind mentioned in which the drug was continuously used from birth do not constitute an exception to what has been said concerning the necessity of the addict's membership in a social group prior to becoming an addict. It is evident, however, inasmuch as the three year old child cannot be called an addict in the sense in which we have defined the term, that the child who receives the drug continuously from birth would only gradually become an addict in proportion to growing maturity and increasing participation in the culture of his group. The developing conception of self, the changing conceptions of causality, and the growing appreciation of and ability to use language which are all involved in the normal development of the child are also implicated, as we have shown, in the process of becoming addicted.

Jean Piaget has described some of the aspects of the development of the mental life of the child as follows:

Originally the child puts the whole content of consciousness in the world and draws no distinction between the "I" and the external world. Above all we mean that the constitution of the idea of reality presupposes a progressive splitting up of this protoplasmic consciousness into two complementary universes--the objective universe and the subjective.¹

Piaget discusses the influence of this progressive differentiation

for the first two years of its life and morphine from then until it was twelve years old. At that time it took a cure and remained free of the drug for twenty years. Evidently this case was reported by A. Lambert, for in another place he describes what appears to be the same case, as follows, "Both the child and its mother were easily cured, the child showing no different reactions, in kind or degree, from an average child; he increased in vigor of mind and body very quickly, and showed not the slightest sensation of craving for the drug" (quoted in *ibid.*, p. 415). Cf. also, Sara Graham Mulhall, *Opium the Demon Flower*, p. 29, where the author states, "The child addict is the only easily curable human atom in the whole army of drug addiction" (see also *ibid.*, p. 39).

¹Jean Piaget, *The Child's Conception of Physical Causality* (New York: Harcourt Brace, 1930), p. 242.

of the subjective and the objective, this development of a self on the part of the child, upon the child's idea of physical causality. He distinguishes seventeen different types of causality beginning with extremely primitive notions and ending up with conceptions of a more adequate type. He concludes:

In the course of our studies in child psychology we had expected to fix upon 7-8 as the age before which no genuinely physical explanation could be given of natural phenomena. Our present enquiry entirely confirms this expectation. After 7-8 the more positive forms of causality gradually supplant the others, and we can say that at the age of about 11-12 the evolution is completed. There is therefore, in the domain peculiar to causality, a process of evolution exactly similar to that to which we drew attention in speaking of reality: confusion of the self and the universe, then progressive separation with objectification of the causal sequences.¹

He then points out that the child's understanding of himself follows his mastery of the external world, "It is only after having assimilated the activity of external bodies to his own muscular activity that the child turns the new-made instrument upon himself and, thanks to it, becomes conscious of his internal experience."²

We conclude, in view of Piaget's description of the child's developing conceptions of causality, that the immunity of children to addiction, the apparent cure of the twelve-year-old who had been given the drug from birth, and the fact that as far as we know no case of addiction below the age of thirteen has ever been described, are not accidental occurrences. They are rather what one would expect in view of what our theory implies concerning the necessity in the addiction process of an adequate conception of pharmacological causality and the existence of self-awareness as a necessary pre-condition to self-analysis and self-observation.³

A further implication of the theory is that insane persons who are unable to perform mental acts as complicated as those involved in addiction would not and could not become addicted. Here again the implications of the theory are fully borne out and its utility for explanatory purposes made evident. It has frequently

¹Ibid., pp. 267-68.

²Ibid., p. 286.

³It may be pointed out that addiction among the feeble-minded appears to be exceedingly rare. In "Report of the Mayor's Committee on Drug Addiction to the Hon. R. C. Patterson, Jr., Commissioner of Correction, New York City," American Journal of Psychiatry, X (1930-31), 483, Dr. C. Schultz stated that only 14 cases out of 318 appeared to be feeble-minded and that they were "probably high grade morons," and seemed "to have their dull wits sharpened by the use of dope." We are not aware of any cases of addiction among imbeciles or idiots.

been noted, sometimes with surprise, that during the time when there was an "opium cure" in vogue for the treatment of certain forms of insanity, these insane persons showed immunity to addiction and practically never became addicts even after prolonged use of the drug. The following are statements from physicians with extensive experience with this aspect of morphin effects:

. . . . several hundred patients suffering from the depressed stage of manic-depressive insanity, were given large doses of opium orally in many instances for periods of from six months to one year. Not one of these patients ever knew what drug he was taking or ever showed any untoward results when it was withdrawn, or in any other way gave evidence of a desire to continue its use. Nor do we recall a single instance recorded in the medical literature of the period during which this form of treatment was administered quite commonly, in which either withdrawal symptoms or a craving for the narcotic was reported. This is significant in view of the idea that manic-depressive insanity is based on an inherited unstable nervous system.¹

Dr. P. Wolff, in Deutsche Medizinische Wochenschrift, reported in a series of articles the results of a questionnaire sent to the leading physicians of Germany. The question to which replies were solicited was, "When is the prescription of opium justified?" Three of the physicians who replied mentioned the absence of addiction among psychotic individuals.

Opium is indispensable in dealing with the fear states of the melancholic individual. But here too we make the surprising discovery that the continued administration of opium, in the form of opium tincture, during the melancholic mental disturbance, even when continued over a long period of time does not produce drug addiction. That is, it does not provided the dosage is adapted to the diseased mental state of the patient and provided that the doctor is careful to withdraw the drug at the correct time, as soon as he notes a decrease in the fear tension or excitement of the psychotic patient. In the last three and one-half decades I have seen a number of cases of morphine addiction develop as a consequence of the overhasty application of morphine in physical distress or disease, but do not recall one single instance in which the administration of scopolamine-morphine during a psychosis led to a craving which lasted beyond the period of the illness.²

Director Bratz of Berlin Sanitarium states that morphine is to be recommended for depression and endogenous psychoses:

But also only in endogenous, that is in simple or periodic melancholia arising from a constitutional basis, and even then

¹Charles E. Scelesh and Sidney Kuh, "Drug Addiction," Journal of the American Medical Association, LXXXII (1924), 680.

²Professor Gaupp of Tübingen (see P. Wolff, "Wann ist die Verschreibung von Opiaten ärztlich Begründet," Deutsche Medizinische Wochenschrift, LVII [1931], 266).

it should be administered only by an experienced neurologist. Warning must be issued against the administration of opiate preparations in cases of reactive depression in psychopaths--that is, depression in response to the vicissitudes of life. In these cases, it leads with especial ease to the development of addiction.¹

Opium is indispensable in many cases of endogenous depressions. . . . The prescription of opiates for states of depression is unobjectionable also because we know from experience that the depressed persons feel no need for narcotics when the depression has passed away, and as good as never become addicts.²

These statements clearly suggest that when the person is cut off from communication with his fellows he is immune to addiction.³ It is particularly significant that some of these observers make a sharp distinction between "endogenous" psychoses or depression and what is referred to by Bratz as depression in response to vicissitudes of life, pointing out that the former is associated with immunity to addiction and the latter with particular susceptibility. This fact is directly contrary to any theory that abnormality in general is a cause of addiction, and is also contrary to a prevalent conception of "insanity" as a phenomenon which differs only in degree from what is known as normality. As far as susceptibility to addiction is concerned, whatever positive relationship may exist between it and abnormality holds true only up to a certain point and for certain minor mental disturbances. In the case of more serious abnormality the relationship is radically reversed.⁴ This situation does not correspond to what one would

¹Ibid., p. 181.

²Professor Bonhoeffer of Berlin (*ibid.*, p. 223).

³C. Blondel (*op. cit.*) makes the following significant statements in this respect: "Tandis, donc, que la conscience normale est éminemment et profondément socialisée, la conscience morbide, pour autant qu'elle le soit, se trouve l'être au minimum" (p. 251). Also, "Le trouble qui interdit à la conscience morbide de prendre à l'égard de ses états, l'attitude qu'imposent les nécessités intellectuelles, pratique ou collectives, est donc un trouble spécifique qui la retranche, momentanément ou définitivement, de son groupe social et de l'humanité entière" (p. 33).

⁴Apparently because the use of an opium cure was restricted to certain types of psychoses some of these statements apply only to those types. However, the often noted absence of psychotic conditions of any kind among drug addicts seems to indicate that the immunity to addiction is general among the psychotic. Unfortunately we do not have any more specific data on this question than that which we have presented.

expect on the basis of the view which places normality and insanity on a graded scale and conceives of the aspects of one as fading gradually and continuously into the aspects of the other.

It will be noted that the negative relationship between psychoses and addiction is regarded as surprising or as something unexpected. On the basis of our theory, however, one could conclude in advance that something of this kind would have to be true in this field. No theory has been proposed by the observers quoted to account for this situation. The hypothesis of the present study offers the means of giving a simple rational explanation of it and thus transforms it from something accidental or eccentric into a necessary implication of the view being developed.

We have already described the addict's desire to be cured and pointed out that it was basically derived from his acceptance of the attitudes of the groups toward his behavior. This relationship of the drug user to the social order which regards him as an outcast is further emphasized in a consideration of the explanations which the drug user advances for addiction. He disagrees with popular opinion on a great many points of detail but the general methods of explanation adopted are simply those adopted by various schools of opinion in the general public. There is no theory of addiction which is the peculiar property of addicts. Neither is there any unanimity among addicts as to the correct approach to the problem. Practically every viewpoint expressed in the literature is also held by some addicts. Sometimes the addict even adopts the view that addiction is caused by the individual's defectiveness or "weakness." We disputed with one addict who advanced this explanation and found that he was quite willing to entertain the objections we raised but apparently continued to believe in his own theory, which was highly uncomplimentary to himself. Some addicts have also told us that the whole matter was simply a physiological affair rather than being psychological in character and others have said the opposite. The addict therefore simply derives his general notions of the nature of addiction from the same sources as the general public does. His personal experiences lead him to correct popular opinion on certain details but his general conceptions of addiction are not directly or markedly affected by these experiences. His theories of addiction are simply the usual traditional views which any non-addict might hold. This is again what one would expect according to the theory that

the addict is a participating member of society, that his mind functions approximately normally under the drug's influence, and that his interpretation of himself is determined by the collective representations of the group.

We find ourselves in complete disagreement with all those statements which seek to characterize the addict's mode of thought as being irrational, or which describe the addict as lacking will-power. We once confronted an addict with this latter accusation. He laughed, and said that morphine strengthened the will. He called our attention to all of the disadvantages and burdens associated with addiction and to the fact that, though he was not using the drug at the time, he intended to resume it at the first good opportunity in spite of all of the difficulties and dangers involved. He called my attention to all of the obstacles which an addict overcomes to obtain his regular supply and asked, "Doesn't that take will-power?" We have frequently been told by addicts that a man with a firm determined will also becomes a firm, determined dope fiend. Zeal formerly expended in condemning "dope" is transformed into zeal in obtaining a supply of it. As we have pointed out, the possession of so-called will-power does not afford any immunity to addiction. The description of addiction in terms of will-power is simply a function of the particular point of view of the observer and, as such, cannot be regarded as an objective description. C. Blondell has pointed out that most of what is regarded as the exercise of individual will-power is simply obedience to the collective representations of the group.¹ From this viewpoint, the truth upon which this description of addiction is based is simply that the addict exercises his will along other than the usual channels and it is the perception of this fact which causes the man on the street to conclude that he lacks will-power. True, the addict finds himself unable to assume the non-addict's attitude toward the drug itself, his evaluation of it is irrevocably different, but it is equally true that the non-addict cannot project himself into the addict's position and point of view. If morphine were present in small quantities in food and water the individual who attempted to avoid it would no doubt be regarded as eccentric or perverse, somewhat the way addicts are regarded at present.

¹G. Dumas (ed.), "Les Volitions," Traité de psychologie (Paris: F. Alcan, 1924), II, 333-423.

The addict is often said to be subject to rationalization and to form an exaggerated and untrue conception of the drug. In fact, we have ourselves made such statements in other parts of this study. We wish to make certain qualifications, at this point, concerning these statements. Concerning rationalization, it may simply be said that it is not peculiar to addicts but is a common human characteristic. The question may also be raised as to who would be doing the rationalizing in the hypothetical society of addicts with one per cent non-addicts? No doubt in such a society this entire discussion would be regarded as an elaborate rationalization of the author's non-addiction. To the non-addict's accusation that the drug user has a perverted and exaggerated conception of the value of the drug, the addict can reply that, after all, his view is based on personal experience and knowledge of the drug and that the non-addict's is based upon lack of experience and ignorance. He can invite the non-addict to experiment upon himself with the drug and see what happens to his views toward it. It is not that the addict loses his powers of choice and becomes an irrational being, or that he is forced to do things which he has no desire to do, but rather that he cannot help but desire the drug. This desire is, of course, basically irrational, just as much as the desire for food is, but, granting the desire, the addict's thought is not thereby made irrational, but is only different from our own. The manner in which it proceeds remains unchanged but the premises upon which it is based are altered--but only in the narrow sphere which is directly connected with the drug. In all other respects the addict is capable of functioning normally. He can discuss politics, analyze his own behavior, understand mathematics, or engage in scientific research about as well as anyone else. If his mind is perverted it is certainly not evident in any sphere not connected with the drug.

The theory which we have sketched has a number of definite implications concerning the cure and prevention of addiction. In the first place, it definitely confirms what is already a fairly general practice, that of keeping the patient who is getting morphin in ignorance of what is happening to him. It also implies that it is a mistake to enlighten anyone suffering from withdrawal distress about the reasons for his symptoms. We have pointed out that a number of the addicts interviewed first discovered the significance of withdrawal distress by being informed of it by a

doctor. It is evident that a physician who assumed that withdrawal distress was identical with addiction would feel no qualms about telling anyone suffering from them what they were. The belief that addiction is nothing but a physical affliction therefore may be regarded as a factor in creating addicts when it leads one to give out information of this kind.

As far as a cure of addiction is concerned our theory implies that it involves a radical change of psychological factors within the individual and that it is not a medical or physiological problem at all. Such a theory may not be particularly hopeful but it is certainly in accord with actual experience with addicts. The medication of withdrawal distress has no demonstrable connection with the permanency of an attempt to quit. The search for non-habit forming substitutes for opiates, based upon the assumption that the matter is a physiological problem, has proved to be the pursuit of a mirage which has resulted in nothing except the discovery of still more powerful drugs, as, for example, heroin, which was widely heralded by the medical profession as a cure of morphin addiction. It was later discovered that it was three times as powerful as morphin and just as habit-forming. In view of the connection between the desire and withdrawal distress the talk of non-habit forming substitutes as a way of eliminating present addicts itself becomes nonsense, for an addict would certainly not be interested in a drug unless it were habit forming.

We may also point out that such ideas as those of "abnormality," "degeneracy," etc., have played no explanatory part in our discussion, in contrast to other current theories in which such characterizations of the addict are very frequent and in which these traits are usually thought to have some sort of causal relationship with addiction. It appears that such concepts are in part merely the reflection of a lack of understanding of the phenomenon and that when the behavior in question is more closely scrutinized, what was first thought of as abnormal behavior gradually ceases to appear as such in the proportion that it is understood. In our view of the matter the question as to the normality or abnormality of the drug addict simply becomes irrelevant, and instead addiction appears simply as the unavoidable and inevitable end product of a sequence of events and processes which could be evoked in any of us provided only that certain specifiable conditions are met. Such a view removes the aura of mystery which has

surrounded the addict. Popular explanations of addiction in terms of uncanny or mysterious pleasures which normal people cannot experience are definitely shown to be false. The drug addict, in terms of our theory, becomes what he has always insisted that he was, simply another human being, rather than the monster of popular mythology.

If our view of the addict is correct the effort expended in the search for medical cures of the craving for narcotics must be regarded as futile, for the only hope of permanent cure would necessarily reside in alteration of psychological conditions rather than in the discovery of a new kind of drug. Such a view does not necessarily make it easy to cure addiction, since no very reliable and certain means exist whereby psychological factors of the type involved may be controlled. It would nevertheless indicate the line of attack by revealing the underlying process in which addiction is established.

We have already mentioned that the implication of our theory is that knowledge of the phenomenon does not confer immunity to it or lead to control of the phenomenon. In fact, the opposite appears to be the case, for the medical profession, which has the best theoretical knowledge of the matter is one which is most subject to addiction. This is one instance in which ignorance appears to be a protection, for the person who is entirely unfamiliar with the action of drugs would be the one who would have the greatest difficulty in making the interpretation of withdrawal distress. It would not appear that a prevention program based upon spreading knowledge of the effects of drugs more widely among the people would be likely to have the desired effect in preventing addiction but that it might actually increase addiction.

Our theory offers a clue to an explanation of the disastrous effects which the drug habit often has in this country. We have previously indicated that competent authorities agree that the drug, in itself, does not cause any specific tissue damage which could be taken as a cause of the character deterioration which frequently takes place in addicts. A more plausible explanation is that this deterioration arises from the inner conflict between the mores of respectable society and the influence of the drug. The addict is necessarily a member of society. As such he accepts and incorporates into the structure of his personality standards of behavior which are in conflict with the exigencies

of the habit. During the intense suffering of withdrawal he commits acts which violate what he himself regards as honourable and right. The very notion of being attached so firmly to a drug is repugnant to him by virtue of his previous training, and he is also fully aware of the popular taboo on addicts which he himself ordinarily shared prior to becoming an addict himself. In spite of all this he finds himself unable to break away from the influence of the drug. The conflict within him between what society wishes him to do and what the drug makes him do is often enhanced to the breaking point by the inability of relatives and friends to understand the motives introduced into his behavior by the drug. To make matters worse, he feels that the drug itself is a necessary means of support in his resolution to quit and a sustaining influence against the ostracism which may be practiced against him. As a consequence of this struggle and as a means of resolving it he may simply resign himself, and become what is known as a "hardened addict." A "hardened addict," from this point of view, is merely one who accepts the justification or rationalization of the habit which has been built up by the underworld addicts in association with each other. In the warmth of intimate association with persons to whom it is not necessary to explain anything and who are themselves in the same situation, he finds that the discomfort, the feelings of inferiority, and the strain of inner conflict which he feels most intensely in association with non-addicts are to some extent relieved. Even then, he rarely frees himself completely from a certain regret, and a nostalgia for a normal life among his fellows. As we have pointed out, even the hardened addict makes determined voluntary efforts to quit, and, like other types of addicts, he may succeed for long or short periods of time.

During our discussion of the drug's effects we have frequently referred to "psychological" effects, but it is clear that these effects were intertwined with or determined by social factors. What are the psychological effects of the drug per se, prior to any social influence? It seems to us that such psychological effects would be present in their pure form in the individual who was unaware that he was under the influence of the drug and who did not recognize its effects. The psychological effects of the drug might be said to be those which occur prior to any interpretation of these effects. They could best be studied among hospital patients who were kept in complete ignorance of what they

were receiving. It is obvious that such a study would have nothing whatever to do with addiction and could give no understanding of it. The social factors are therefore not incidental to addiction but central. The phenomenon of opiate addiction is neither physiological nor psychological in essence--it is social through and through. If there were no organized social life there would be no addiction, and addiction itself does not and cannot exist outside of human society.

The question has arisen in the course of this study as to whether our theory could be called a sociological theory rather than a psychological one. In general we have subordinated this question to the consideration of the correctness of the theory regardless of whether it should be placed in the field of sociology, social psychology, or psychology--assuming that valid distinctions have been made between these fields. We have assumed that research should not be guided by a priori, and perhaps false, distinctions of this kind, but rather that the distinctions between these fields must themselves be determined by research.

In a recent publication of the Social Science Research Council¹ the following statements were made concerning the character of the sociological approach:

On the whole, as we say elsewhere, sociologists, in their search for social trends, tend to glide over the problem of individual differences. This omission is not to be condemned because no generalization is usually made about the uniqueness of each individual other than the assertion that it exists. Due to this attitude toward society sociologists seldom talk about an individual, rather they prefer concepts which, while assuming that individuals are behaving, nevertheless transcend particular aspects of any given sample of behavior. . . . In order to utilize important sociological opinions and "facts," we must interpret them as though the competition or cooperation that is involved is referable to specific human beings.

The implication of the discussion of these authors is that the sociologist confines himself to a sort of bird's-eye view or survey approach and that when he ceases to do that and refers the behavior which he studies to specific human beings he becomes a psychologist.

It should be emphasized that the distinction between psychology and sociology may be made either on the basis of what persons who are called psychologists and sociologists are doing,

¹M. A. May and L. A. Doob, Competition and Coöperation, Bulletin No. 25, April, 1937, p. 48.

or it may be made on logical grounds or according to distinctions or criteria that inhere in the data. The statement quoted above was evidently of the former type, and as such it represents, insofar as it is true, the influence of the traditional dichotomy of "individual versus society" as it has expressed itself in the departmental organization of our universities and colleges and the traditional division of labor between these departments. Even though this dichotomy is generally admitted to be false by competent students of human behavior, the line between psychological and sociological research has tended to be drawn as though this were not the case. Sociologists who glibly repeat the hacknied statement that the "isolated individual is an abstraction" and that the "social" and the "mental" are inextricably interwoven often do not apply their own theory to actual research, where it is still felt that the sociologist must somehow study "groups" and avoid individuals. It is unnecessary for us to emphasize that the rigid acceptance of the dictum that the psychologist studies only "isolated individuals" and that the sociologist studies only "groups" would reduce both fields to impotence.

Sociologists are fond of asserting that social institutions, and social factors generally, influence and mold individual personality. It has been our aim in this study to show, in as concrete and specific a manner as we could, how this process goes on. We do not deny individual differences between drug addicts but maintain that our generalization refers to aspects of drug addiction which do not vary from individual to individual. The main point of our study might be said to be that the "isolated individual" cannot become an addict. We have been concerned, it is true, with processes going on in individual minds, but we have taken pains to show that these processes were themselves determined and molded to an indefinite and pervasive extent by social influences. We have pointed out that the person's inner conversation with himself was of central importance in the process of becoming an addict. Such internalized conversation is inconceivable outside of human society and involves the individual's utilization of the social institution of language. Although it seems to us outside of our province to attempt to say what the distinction between sociology and psychology should be, it is perfectly clear that on the basis of currently accepted theories there is no justification whatever for saying that our treatment of addiction is

not sociological because it deals with "specific individual addicts" or because it deals with "mental" rather than "social" processes, assuming the two can be separated. As R. M. MacIver states, "We are also students of psychology when we study society; we are no less students of sociology when we study the mentality of the human being."¹

As a rule, sociologists have regarded research work in which the mentality of the human being has been studied by sociologists as social psychology, though this practice varies from one country to the next and it is doubtful if American psychologists would agree with the sociologists. Although our study would perhaps be called a study in social psychology by American sociologists, it would probably merely be called sociological in France, for example. It is not clear to us that the fields of social psychology and sociology have been very clearly differentiated, nor is it clear to us that the attempt to study sociology apart from considerations of a social psychological character can be fruitfully carried out. Any attempt to definitely place our theory in the field of either social psychology or sociology seems to us to be futile and premature by reason of the interrelated character of these fields and because of the uncertain lines that have been drawn between them.

The attempt has frequently been made to explain addiction as a purely physiological or medical problem, though most competent writers today admit that that is impossible. It has been self-evident for many years that the peculiarities of the physiological effects of opiates were essential aspects of addiction, but at the same time it has been equally clear that they did not provide a sufficient explanation of the matter. Almost a century of experimentation with medication for withdrawal distress, sometimes on the assumption that addiction was a purely physical disease, has lead only to disillusionment as is well brought out in the following episode, related to us by the addict involved:

An addict who had served a number of terms in prison, met a prison doctor on the streets of Chicago. He talked with him about the new narcotic farm in Lexington, Kentucky, where addicts serving terms for violation of the narcotic laws are given the most humane and careful treatment.

The addict inquired, "Well, what are they doing for the boys? Are they really curing them?"

¹R. M. MacIver, Society (New York: Farrar Rinehart, 1937), p. 19.

The doctor hesitated a moment and replied, "Well--it's up to you fellows, you know."
 "It's always been up to us, hasn't it, Doc," was the addict's response.

The effort to account for the whole problem of addiction in the conceptual framework of biological theory has shattered upon the fact that, though the addict's physiological need for the drug could be controlled and eliminated, his desire for it could not be. It is also well known that the presence of the physiological need does not by any means imply the presence of a psychic craving for the drug. Our theory does not deny the essential role of organic phenomena but rather gives them a necessary place and an intelligible function, for before withdrawal distress can be interpreted it must be objectively present, and before a person can consciously use the drug to avoid it he must have consciously experienced it.

We have used the term "habit" throughout our discussion of opiate addiction, but we have done so only for common sense reasons. We are unable to see how the opiate habit can be regarded as an instance of habit and be treated intelligibly in terms of current theories of habit formation. We have attempted to study only the opiate habit, and though we are ready to admit that it may resemble some other habits we do not believe that it can be assumed to do so without demonstration. The essential matter is to understand and explain specific forms of behavior rather than to make assumptions concerning the uniform character of whole fields of behavior. The inapplicability of the term "habit" in any strict sense to addiction is apparent from the fact that according to ordinary usage one might say that a person could have a habit of taking morphin without being addicted, as for example, if he were to take one injection every Saturday night, every week in his life. One could also say that persons can become addicted without any prior habit of using the drug, as, for example, when an unconscious hospital patient has it administered to him.

The methodological implications of our study may perhaps be most clearly defined by considering the traditional methods which have been applied to the problem of addiction. The most common has been to seek within the personality of individuals the selective factors which cause some persons to voluntarily use the drug until they are addicted while other persons voluntarily refrain from using the drug at all or from using it long enough to

become addicted. The fact that the whole process of becoming addicted may sometimes be entirely involuntary, in that a person may become addicted through the hospital administration of the drug, has usually not bothered those who took this position because the only form of generalization which they hoped for was not one of a universal type. They hoped to be able to state, as Kolb has done, for example, that 68 per cent of a sample group of addicts were defectives prior to addiction. To such a generalization an exception has no meaning since it is included in the 14 per cent of the cases to which the theory admittedly does not apply.

It follows from the use of this method that other research may demonstrate that it can be said with equal truth regarding another group of addicts that 80 per cent (or some other per cent) could be characterized in some other way prior to becoming addicts. If it is then concluded that each of the variables positively correlated with addiction is a casual factor, it then becomes possible to list a large number of factors, all of which are statistically related to addiction. Each of these factors may then be called a cause of addiction and a plausible case made out for each one of them, for, as Zaniecki stated, "Outside of the lunatic asylum there are no theories unsupported by facts."

The logical consequence of this procedure is obviously the acceptance of what is often called a "multiple factor theory of causation." The various competing theories in the field then appear to be equally true, depending upon the particular cultural setting from which the sample groups of addicts are taken, and no crucial test of these theories is possible because none of them can, in the nature of the case, be applicable to all of the cases. Moreover, any one of the factors may also be positively correlated with other phenomena besides addiction and the same cause is thus found for many different phenomena. Abnormality or psychopathy is not only the cause of addiction, but the cause of crime, and many other forms of behavior as well. It is sometimes concluded from this situation that a phenomenon can be explained with equal plausibility using any one of a number of alternative theories depending upon the particular predelections or point of view of the individual. About theories of this kind one can only argue concerning their plausibility, their acceptance or rejection will be determined as much (or more) by the rhetoric or prestige of one who pleads for them as by the evidence.

It seems to us that the statements so often repeated--that any generalization concerning human behavior is necessarily relative to a particular culture, that social life and personality form an organic whole and cannot be broken down into simpler elements in analysis, that causes for behavior vary from each case to the next, that the behavior of a particular individual can only be explained in terms of his biography--are all merely rationalizations of the failure of the above methodological principles to produce results in research. The obsession of sociologists with these methodological presuppositions has led them to focus their attention upon differences rather than upon similarities. The differences between individuals and the differences between cultures have been stressed to the neglect of the common elements of behavior upon which significant generalizations of wide scope might be based. The fundamental defect of this whole approach resides in the fact that it does not assign the exceptional instance to its proper role as the cumulative point of science, the point at which old theories are tested and reconstructed. Exceptional instances cannot simply be relegated to a small percentage pigeon-hole and then forgotten, as is done at present, if social science is to develop into a living and growing structure.

The question may be raised as to whether the method employed in the present study could be applied to other forms of human behavior besides opiate addiction. Perhaps opiate addiction is an unusually simple and invariable phenomenon which lends itself to the method used while other data might not do so. To this objection we should point out that drug addiction has been regarded as a chaotic, paradoxical, and highly variable phenomenon. It differs in countless respects from individual to individual and from country to country. In these respects it is similar to other types of human behavior. It therefore appears to us that the apparent variability or invariability of a phenomenon depends upon the theory which is held with respect to it. When a thing is satisfactorily explained it seems simple and invariable; when it is not satisfactorily explained it appears the opposite. We therefore feel that our method could be used in the study of other forms of behavior. The fact that it is a more or less standard scientific procedure confirms our belief that it could be used in other fields. It is the function of science to cut through variability in the search for invariability and for valid generalizations, and we suspect that many times the invariability, or the common uni-

versal aspects of human behavior, are not found simply because they are not sought. Social scientists have become preoccupied with differences and variability to such an extent that they have forgotten that the apparent orderliness of the world is not something immediately given and self-evident but is something imparted to the data by the conceptual constructions of scientific analysis.

The assumptions upon which the present research is based differ radically from those described, and may be expressed by quoting Zaniecki. Speaking of the method, which we have described as the principal one that has been applied to addiction, he states:

The only reason for the existence of this method is, as we have seen, the impossibility of arriving by enumerative induction at judgements of the type "all S are P," or rather, "if p, then q." Whenever such judgments can be formulated, the use of the statistical method is precluded. Now, everybody knows that in physical and biological sciences there are innumerable judgments bearing upon empirical reality which have this form. Every botanist or zoologist in describing a species means to characterize all the living beings of this species; every physicist or chemist in formulating a law claims that the law is applicable to all the processes of a certain kind. Does this mean that the reality with which the botanist or the physicist is dealing is so uniform empirically that no exceptions, no deviations from the type can ever be observed? Of course not: the botanist or the physicist well knows that cases may be discovered which will contradict his generalization. But he is not afraid of them. He is ready to grant any exception as raising a problem and thus stimulating new research. The research may enlarge and confirm his theory by helping to discover a new species or a new law definitely connected with his previous generalization--which will mean that the exception was only apparent. Or further research may invalidate his former generalization and force him to reach wider and deeper in creating a new and more efficient theory.¹

Our method has been to look for the common and distinctive characteristics of addiction rather than for the relatively prevalent characters found in "many" or "most" addicts. Our aim was therefore to isolate the process which gives rise to these common and distinctive characters of the phenomenon, and which is therefore present in all cases. And while we believe that the truth of our main contentions has been established, we do not set them up as absolute truths, but as approximations inviting further refinement and modification, just as they have been refined and modified in the course of this study.

¹F. Zaniecki, *The Method of Sociology* (New York: Farrar Rinehart, 1934), p. 232. Cf. also K. D. Har, *Social Laws* (Chapel Hill: University of North Carolina, 1930), and G. H. Mead, "Scientific Method and Individual Thinker," *Creative Intelligence* (New York, 1917), pp. 176-227.

